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*As for the wise, their
body alone perishes in
this world — Rashi*

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Brandeis University

**The
Graduate School
of Arts and
Sciences
1973–1974**

WALTHAM, MASSACHUSETTS

"It must always be rich in goals and ideals, seemingly attainable but beyond immediate reach . . .

"It must become truly a seat of learning where research is pursued, books written, and the creative instinct is aroused, encouraged, and developed in its faculty and students.

"It must ever be mindful that education is a precious treasure transmitted—a sacred trust to be held, used, and enjoyed, and if possible strengthened, then passed on to others upon the same trust."

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—from the writings of
LOUIS DEMBITZ BRANDEIS (1856–1941)
on the goals of a university.



Louis Dembitz Brandeis
from a sculpture by Robert Berks

brandeis university bulletin



graduate school of arts and sciences

1973-1974

august 22 1973

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Brandeis University



Waltham, Massachusetts

...itue of Supreme Court Just
Louis Dembitz Brand
by Robert Be

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University Organization



Brandeis is one of the few small universities in the United States. The academic programs, described below, are each limited in size to encourage quality and integrity of intellectual achievement. There is constant interaction between college, graduate and professional schools, and institutes. The accomplishments of one set automatic pace for the others, and the interchange benefits all, creating an intellectual environment of decided vitality. Additionally, the organic richness of the extensive research activity fertilizes the undergraduate roots of the institution no less than the graduate and professional programs.

The College of Arts and Sciences

In keeping with its general objectives, Brandeis attaches the greatest of importance to the liberal arts curriculum. It is designed to offer full academic opportunities for those students planning to pursue graduate or professional studies as well as those whose educational objective is the baccalaureate degree.

The College of Arts and Sciences offers instruction in the Schools of Creative Arts, Humanities, Social Science and Science. Regularly matriculated students pursuing courses of instruction under the Faculty of Arts and Sciences may, upon satisfactory completion of the first year, continue as candidates for the Bachelor of Arts degree.

Established in 1948, Brandeis' College of Arts and Sciences received full accreditation from the New England Association of Colleges and Secondary Schools in 1953.

(Full information is available in the catalog of the College of Arts and Sciences.)

The Graduate School of Arts and Sciences

The Graduate School is designed to educate broadly as it trains professionally. It is sensitive to the fact that as specialization increases within society, the traditional boundaries between the Ph.D. and advanced professional degrees

are gradually losing their distinctions. It seeks to achieve a spirit of informality, without sacrificing work disciplines.

The Graduate School of Arts and Sciences offers courses of study leading to the master's and doctor's degrees. Graduate areas include Anthropology, Biochemistry, Biology, Biophysics, Chemistry, Comparative History, Contemporary Jewish Studies, English and American Literature, History of American Civilization, History of Ideas, Literary Studies, Mathematics, Mediterranean Studies, Music, Near Eastern and Judaic Studies, Philosophy, Physics, Politics, Psychology, Sociology and Theater Arts.

The Florence Heller Graduate School for Advanced Studies in Social Welfare

The Florence Heller Graduate School for Advanced Studies in Social Welfare, made possible through the generous grant of the late Mrs. Florence Heller of Chicago, was established at Brandeis University in 1959. The School has two basic educational programs:

1. The doctoral program for experienced social welfare practitioners who have the degree of Master of Social Work, or its equivalent, and experience on a professional level.
2. The pre-doctoral program for students without professional experience leading to the degrees of Master of Social Work and Doctor of Philosophy.

The program of study both for the experienced social welfare workers and beginners leads to the doctorate and is designed to qualify graduates for administrative and consultative roles in established areas of social work, as well as newly emergent areas such as international social work, inter-group organization, labor, industry and government. Emphasis is placed upon community organization, social work administration and research, making full use of the social sciences.

Students who enter the doctoral program are required to spend two years in residence. Those who enter the pre-doctoral program will receive the degree of Master of Social Work during the period of their doctoral study when they complete the requirements for the Master's degree.

(Full information is available in the catalog of the Heller Graduate School.)

Rosenstiel Basic Medical Sciences Research Center

The Lewis S. Rosenstiel Basic Medical Sciences Research Center was made possible in 1968, through the largest single gift in the University's history,

by Brandeis Fellow Lewis S. Rosenstiel. The Center will have coordinated research programs in the basic medical sciences which will include work in biochemistry, biology, chemistry, microbiology, physics, and psychology. The staff of the Center is jointly appointed to the Brandeis faculty basic science departments. Both doctoral programs in these departments, and predoctoral training will be available in the Rosenstiel Center. Simultaneously, under the leadership of the Director and Faculty Advisory Committee, the Center will gradually broaden its scope to include new research, invite participation of distinguished scholars and medical scientists, offer hospitality for younger researchers at the fellowship level, sponsor symposia and colloquia, and underwrite scholarly publications. In 1972, a visiting scholar program was initiated.

The Basic Medical Sciences Research Center will contain the latest sophisticated scientific equipment and facilities. Through cooperative programming, both with departments at Brandeis and in the Boston area, the Center will broaden the scope of basic medical science research offerings at Brandeis. Grants from such agencies as the National Science Foundation, National Institutes of Health and American Cancer Society, among others, support research programs in the Rosenstiel Center.

Endowed Schools

The Danielsen School of Philosophy, Ethics and Religious Thought

The Albert V. Danielsen School of Philosophy, Ethics and Religious Thought was made possible through a gift from a Fellow of the University from Wellesley Hills, Massachusetts.

The School includes the Department of Philosophy which now combines undergraduate and graduate programs through the M.A. and Ph.D. degrees. The graduate program in philosophy is designed to prepare students for careers in the field as scholars and teachers, and it places traditional emphasis on logic, epistemology, metaphysics, value theory and the history of philosophy. Added to the two fully endowed chairs of philosophy in the School is the Albert V. Danielsen Chair in Christian Thought.

The Danielsen School thus hopes to encourage the advancement of philosophical thought in the context of contemporary issues, following the broadest scholarly and interdisciplinary approaches in an age of ecumenism and imperative social need.

Fierman School of Chemistry

The Harold and Minnie Fierman School of Chemistry, created through a benefaction from Brandeis Trustee Harold Fierman, incorporates graduate and undergraduate programs, including research activities, lecture programs

and colloquia. The American Council on Education has cited the Brandeis program as a national leader in the field of graduate study.

At the undergraduate level the curriculum is highly diversified, including basic courses in analytical, nuclear, organic and physical chemistry, as well as chemical kinetics and structure determination of crystals and molecules.

At the graduate level, M.A. and Ph.D. candidates pursue advanced studies and research projects in quantum chemistry, enzyme reactions and synthetic and theoretical chemistry. Graduate students at Brandeis hold National Science Foundation Fellowships, National Institutes of Health Fellowships and National Aeronautic and Space Administration Traineeships, among others.

The School has been aided, in part, by grants from the Atomic Energy Commission and the National Science Foundation.

The Fisher School of Physics

The Martin Fisher School of Physics was established through a gift from Martin Fisher of New York City, a Fellow of the University. The School is designed to strengthen the physics curriculum and emphasize both theoretical and experimental physics.

Through scholarship and fellowship assistance provided by Mr. Fisher, teaching and research at the undergraduate, graduate and post-doctoral levels will be enhanced, and a setting provided for lectures, colloquia and scholarly publications produced by the School.

The School's undergraduate program ranges from introductory courses in classical and modern physics, computer sciences and astronomy, to atomic and nuclear physics, theoretical and continuum mechanics, quantum mechanics, high and low energy nuclear, solid state and mathematical physics. M.A. and Ph.D. programs include 12 research courses, courses in astrophysics, atomic and plasma physics, quantum theory of fields and solids and courses in general and special theories of relativity.

Grants from such agencies as the National Science Foundation and the Atomic Energy Commission, among others, support research programs in the Fisher School.

The Kutz School of Biology

The Milton and Hattie Kutz School of Biology was made possible through a gift from the estate of the late Hattie Kutz of Wilmington, Delaware. The School encompasses the University's undergraduate and graduate biology departments. The biology curricula present a comprehensive body of courses that advance from fundamental studies to more complex areas with special heed to new discoveries and the results of current experimentation.

Students are offered a well-conceived balance between traditional background in biology and the thorough discussion of new knowledge constantly developing in this discipline. They are also encouraged to engage in original research and independent study. The biology program, directed and taught by first-rank scientists, also provides research and teaching opportunities for a large number of post-doctoral fellows.

A sizable portion of the governmental, industrial and private research grants awarded to the University are devoted to varied projects in biology, including cancer research. Distinguished scientists appear frequently at colloquia and lectures to explain their investigations.

Lown School for Near Eastern and Judaic Studies

Created through the generosity of Brandeis Trustee Philip W. Lown of West Newton, Massachusetts, the Lown School for Near Eastern and Judaic Studies encompasses an intensive teaching and research program in ancient and modern Jewish thought, history, culture and issues, offered by both the undergraduate and graduate departments of Near Eastern and Judaic Studies. The University has assembled an array of distinguished scholars who offer an extremely broad complex of programs designed to prepare students for scholarly careers or for communal service.

The School includes the Center for Contemporary Jewish Studies, organized for the specific purpose of further research and seminars dealing with major contemporary issues.

The Lown School for Near Eastern and Judaic Studies cooperates closely with the American Jewish Historical Society, whose headquarters building on the Brandeis University campus was completed during 1968.

The Swig School of Political Science

A generous benefaction from Brandeis Trustee Benjamin H. Swig of San Francisco has established the Swig School of Political Science. The Swig School encompasses the University's Politics Department including several endowed academic chairs established earlier through the efforts of Mr. Swig. They are designated in honor of his friends and distinguished Americans such as former President Harry S. Truman, for whom a chair in American Civilization has been created; the Earl Warren Chair in American Constitutional Studies; the Christian A. Herter Chair in International Relations and the Adlai E. Stevenson Chair in International Politics. The Swig School faculty includes many of the most respected figures in the field whose writings are widely quoted and whose counsel is regularly sought by government at top level.

Related Academic Programs

Wien International Scholarship and Fellowship Program

The Wien International Scholarship and Fellowship Program, created in 1958 by the Lawrence A. and Mae Wien Fund, is designed to further international understanding, to provide foreign students with opportunities for study in the United States, and to enrich the intellectual and cultural life of the Brandeis campus.

The Program permits the University to offer scholarships and fellowships on the undergraduate and graduate levels. The undergraduate scholarship covers the basic costs of tuition, on-campus board and room, and standard student fees. In some instances, based upon financial need, the grant may be extended to include book allowances, and a bi-weekly maintenance allowance. Awards made for a single academic year to students who are candidates for a degree may be renewed upon application. Renewals may be granted by the Committee on the Admission of Wien Scholars and its decision is final.

Undergraduate applicants may also be accepted as Special Students who apply for this "year abroad" in order to enhance and complement work taken in their own countries. These students return to their home universities when their year at Brandeis has been completed.

All applicants for both the undergraduate and graduate grants must have a thorough knowledge of the English language inasmuch as all students study within the regularly organized curriculum. In addition, opportunities are provided for all Wien Scholars to attend special seminars, conferences, and field trips which are planned to provide an understanding of many facets of American society.

Inquiries concerning the undergraduate program should be addressed to the Wien International Scholarship Program, Office of International Programs, and should contain a brief resume of the applicant's scholastic background and field of interest. Inquiries concerning the graduate program may be addressed either to the Office of International Programs or to the Graduate School itself.

The Abram L. Sachar International Fellowship Program

The Abram L. Sachar International Fellowship Program was set up by the Trustees in tribute to the first President of the University. It is a highly selective program that sends Brandeis graduate and undergraduate students to outstanding foreign universities for a period of study to supplement the training that they have had at Brandeis. To date under the Sachar program students have gone to such universities as: Ife and Makerere in Africa; London and Sussex in England; L'Institut des Études Politiques in Paris; the

College of Europe in Bruges, Belgium; the Hebrew University in Israel; and Bratislava University in Czechoslovakia.

The program operates on a variety of levels. For example, a graduate student upon completion of his qualifying examinations may pursue his advanced research at, or in connection with, an overseas university especially appropriate to his interests. An unusually well-qualified undergraduate may obtain permission from his department to spend a year at a foreign university which has offerings not available at Brandeis. Or a graduating senior may spend a *wanderjahr* abroad as a culmination to his Brandeis experience.

All expenses for the scholarships and fellowships will be underwritten by the Sachar Tribute Fund. Scholarships will be scaled according to financial need. Applications for inclusion are to be directed to the Office of International Programs and will be evaluated and processed by a special faculty committee.

Robert and Jean Benjamin Center for International Studies

Underwritten by Brandeis Trustee Robert S. Benjamin, board chairman of United Artists Corporation, the Center for International Studies will support both teaching and research. It will embrace undergraduates, graduate students, resident faculty, visiting scholars and experts.

The Center's primary function will be to serve as the organizing instrument for teaching and research focusing on selective themes of scholarly importance to international studies and to the pursuit of peace.

The Center will devote itself to the theme of the international consequences of modernization in terms of a variety of topics. Any topic chosen will be explored in a number of ways.

The first and constant objective will be to combine teaching and research in a way that will benefit and stimulate teachers, graduate students and undergraduates alike.

The daily operation of the Center will be the responsibility of a director and a board of faculty advisers. The advisers will be drawn from the various departments that are most concerned with international affairs.

Irving and Rose Crown Fellowships

Underwritten by the Crown family of Chicago, the Irving and Rose Crown Fellowships subsidize graduate students in the field of American Civilization with substantial grants to complete their studies and research. The fellowships are designed to attract gifted and interested scholars who plan careers in teaching, research, government, diplomacy and allied areas. Candidates are proposed annually by a faculty committee drawn from Brandeis and screened by distinguished authorities from other universities. Applicants need not be Brandeis students and should have reached a point where they are in

the final stages of their work to attain their doctorate. At least ten fellowships are awarded annually.

Goldwyn Life Sciences Fellowships

Established by the Samuel Goldwyn Foundation of Los Angeles, the Samuel Goldwyn Life Sciences Fellowships provide support for graduate students studying the life sciences. Preference is given to foreign-born applicants who need financial aid and who seek to study in the United States. Five full renewable fellowships—covering tuition, health fee, research support and a stipend—are provided annually.

Gordon Fellowships

A subsidy from the James Gordon Grant for Government of Chicago has permitted the Department of Politics to develop a special doctoral dissertation program providing Fellowships to selected qualified candidates for the Ph.D. degree in Politics. To be eligible, students must have completed their first year graduate work, either at Brandeis or elsewhere. The Fellowship awards are limited to individuals whose dissertations deal with approved topics within the fields of American urban and/or local political problems. Fellowships may be held for one or two years. The subsidy also provides research funds, summer stipends, and travel money for field work or investigation in connection with preparation of the dissertation.

Levitz Scholarship and Fellowship Fund

Established in the name of Brandeis Fellow Ralph Levitz of Miami, Fla. and Pottstown, Pa., the Levitz Fund provides scholarship and fellowship aid to worthy and deserving students at Brandeis University. The fund was made possible through a generous grant from Mr. Levitz and contributions of friends and associates within the furniture industry.

Mary and Abbey Hirschfield Fellowships in the Humanities

Created through a major bequest to Brandeis University from the estate of the late Mary Hirschfield of Chestnut Hill, Mass., the Mary and Abbey Hirschfield Fellowships offer annual assistance to graduate students in the Humanities. Selection of students to receive the fellowships is made by a special committee of Brandeis University faculty, which determines choices on academic achievement and financial need. Students eligible for the generous fellowships are taken from the areas of Classics, English and American Literature, Romance Languages, Germanic and Slavic Languages, Philosophy, History of Ideas, Mediterranean Studies, and Near Eastern and Judaic Studies. The fellowships bear the name of Mrs. Hirschfield and her husband, Abbey, who died some 26 years ago.

The Mildred and Harry Remis Endowed Scholarships in the Creative Arts

Established by Brandeis Trustee and Mrs. Harry Remis of Boston, Massachusetts, this endowment offers scholarship assistance to needy students who have demonstrated promise and potential in the Creative Arts. Students that are selected for these scholarships must demonstrate talent in Music, Fine Arts, and/or Theater Arts, and require financial aid in order to complete their studies.

Bernard and Miriam Kessner Fellowships Trust Fund in Biology and Chemistry

The Kessner Fellowships are underwritten by Dr. and Mrs. Bernard H. Kessner of Bay Harbor, Fla., to provide annual support to graduate students in the fields of biology and chemistry. These generous fellowships go to ten graduate students, selected each year from applications made throughout the United States. A Brandeis University faculty committee processes the applications, but final choices are made by a special jury of three outstanding academic figures in the fields of biology and chemistry. The Kessner Fellowships are designed to help students, who are planning careers in research and university teaching, complete their doctoral training without the interruptions that so often accompany post graduate work.

Facilities Projected and Under Construction

Graduate and Married Student Apartments

In order to meet the very substantial need for housing the University's graduate students, married undergraduate students, post-doctoral fellows and young faculty, the University has undertaken construction of a cluster of buildings which will provide 160 needed apartments. The central building in this complex, named for Max and Ann Coffman of Brockton Mass., will include meeting rooms and social facilities as well as apartments.

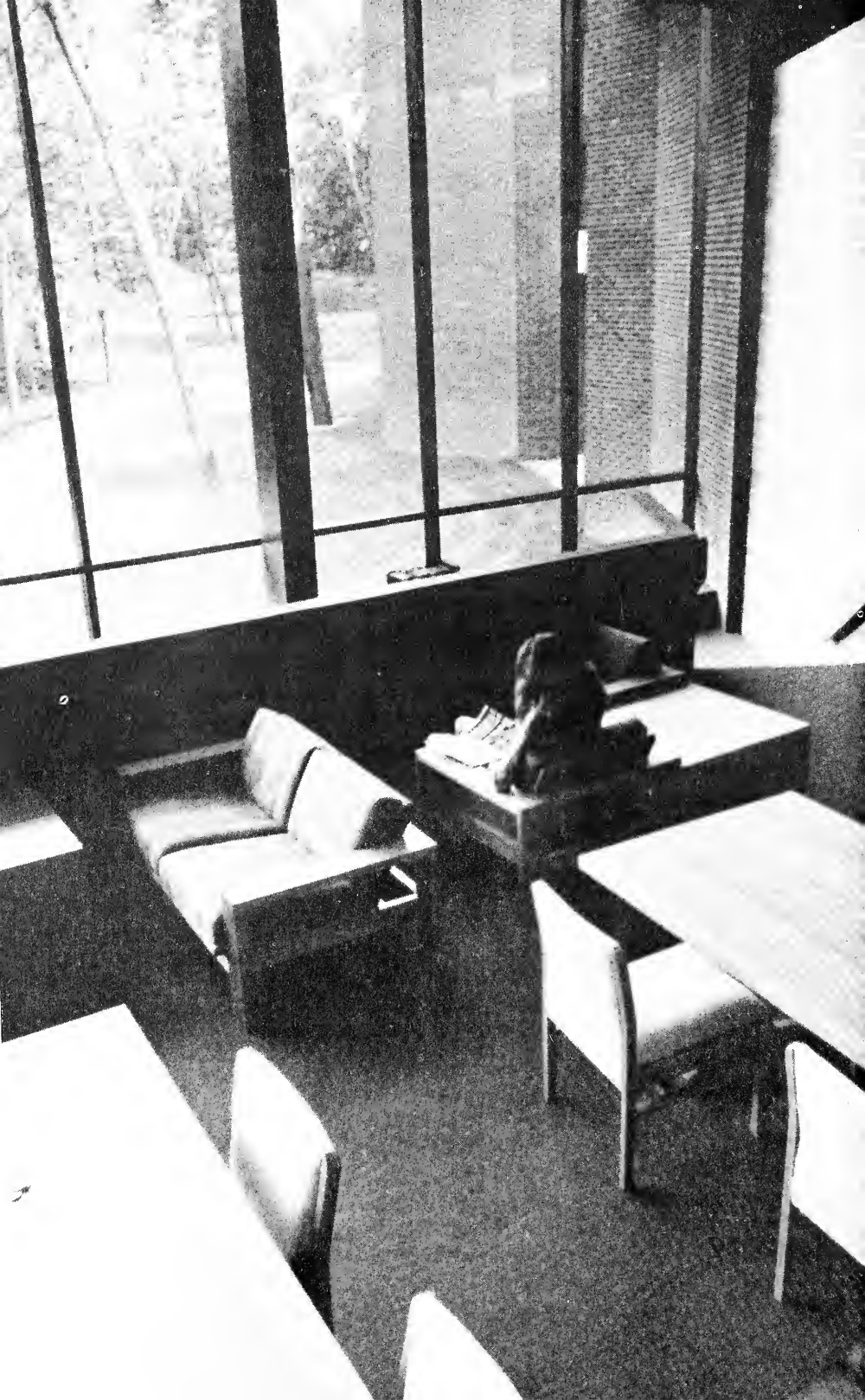
It will be located on a tract overlooking the Charles River, within a short walking distance of the main campus.

Golding Medical Outpatient Services Building

This facility will be adjacent to the University infirmary and will provide a treatment room, consulting, examining and medical records rooms.

Pollack Fine Arts Teaching Center

The expanded art teaching program at the University has made it necessary to provide additional facilities. The Maurice Pollack Fine Arts Teaching Center will include a specially designed lecture hall for teaching art history and a multi-purpose studio and photo study room. This center will be located between the Art Teaching Center and the University Museum.



The Graduate School of Arts and Sciences



General Information

History and Organization

The Graduate School of Arts and Sciences was formally established in 1953 when the University Board of Trustees authorized graduate study in the Departments of Chemistry, Music, Psychology and Near Eastern and Judaic Studies. The first Master of Arts degree was conferred in 1954; the first Master of Fine Arts degree, in 1954; and the first Doctor of Philosophy degree in 1957.

The general direction of the Graduate School is vested in a Graduate Council of the Faculty composed of the President and the Dean of Faculty, ex officio; the Dean of the Graduate School; and one representative, usually the chairman, of each of the several University departments and committees offering graduate instruction. The members of the Graduate Council are appointed by the President on the recommendation of the Dean of the Graduate School. The functions of the Graduate Council, exercised in consonance with University policy, are to determine requirements for admission; to provide programs of study and examinations; to establish and maintain requirements for graduate degrees; to approve candidacy for degrees; to make recommendations for degrees; to make recommendations for new areas of graduate study; to lay down such regulations as may be considered necessary or expedient for governing the Graduate School; and to exercise a general supervision over its affairs. The Dean of the Graduate School is the chairman of the Graduate Council and the chief executive officer of the Graduate School.

Objectives

The underlying ideal of the Graduate School is to assemble a community of scholars, scientists and artists, in whose company the student-scholar can pursue study and research as an apprentice. This objective is to be attained

by individualizing programs of study, restricting the number of students accepted, maintaining continual contact between students and faculty, and fostering the intellectual potential of each student.

Degrees will be granted on the evidence of intellectual growth and development, rather than solely on the basis of formal course credits. Fulfillment of the minimum requirements set forth below cannot, therefore, be regarded as the sole requisite for degrees.

Areas of Graduate Study

During the academic year 1972-73, graduate programs will be offered in the following areas:

- | | |
|-------------------------------------|-------------------------------------|
| 1. Anthropology | 12. Mathematics |
| 2. Biochemistry | 13. Mediterranean Studies |
| 3. Biology | 14. Music |
| 4. Biophysics | 15. Near Eastern and Judaic Studies |
| 5. Chemistry | 16. Philosophy |
| 6. Comparative History | 17. Physics and Astrophysics |
| 7. Contemporary Jewish Studies | 18. Politics |
| 8. English and American Literature | 19. Psychology |
| 9. History of American Civilization | 20. Sociology |
| 10. History of Ideas | 21. Theater Arts |
| 11. Literary Studies | |

Details of the programs and courses offered in these areas are given below.

Graduate study in Social Welfare is offered by the Florence Heller Graduate School for Advanced Studies in Social Welfare. For further information see the catalog of the Heller School.

Graduate School Office

The Graduate School office is located in the Rabb Graduate Center. The office is open Monday through Friday from 9 A.M. to 5 P.M. All requests for information, catalogs and application forms should be addressed to the Dean of the Graduate School of Arts and Sciences, Brandeis University, Waltham, Massachusetts 02154.

Dining Facilities

Graduate students may sign for a fourteen, fifteen or twenty-one meal contract. Arrangements for such a contract are made at the Food Director's Office in

Kutz Dining Hall. A separate kitchen is maintained for those wishing kosher meals. Individual meals and light snacks may be purchased at Usdan Student Center.

Office of International Programs

This office administers the Wien International Scholarship Program, the largest privately endowed foreign scholarship program in the United States, and serves as the counseling center for the more than one hundred students who come here from Asia, Africa, Europe and South America. It advises students of special social and educational activities and provides assistance in fulfilling the legal procedures required by the U. S. Immigration Service in obtaining working permits and documents necessary for extended periods of study, and in other technical matters which may arise. (See page 12)

In addition, the office provides the Brandeis community with information on academic opportunities abroad such as Fulbright grants for graduate students and faculty, the Watson Fellowships and Rhodes Scholarships for seniors being graduated, the Abram L. Sachar International Fellowship Program (see page 12), and the Jacob Hiatt Institute for study in Israel. American students wishing to study abroad on university accredited programs should consult this office.

The University Health Services

The University Health Services provide a program of comprehensive health care for students not only as it relates to physical illness, but also to personal and emotional concerns. Students are entitled to services available, without charge, at the Stoneman Infirmary, the Golding Medical Outpatient Service Center and Mailman House. In addition, each student is encouraged to participate in the Brandeis University Student Health Insurance Plan or the Student Dependent Plan. Although participation in the Plan is not mandatory, it is required that a suitable alternative insurance plan be substituted. Except for limited day-care facilities, the Health Services and the use of the Infirmary are available to students only during the period in which the University is in regular academic session.

Prospective students planning to matriculate in the College and the Graduate Schools are responsible for the submission of a Health Examination Report completed by their family or personal physician. In addition to information about previous health and details of the physical examination, evidence of immunization against smallpox and tetanus are required. If possible, protection against poliomyelitis is desirable. Since students may not



register until these requirements have been satisfied, it is strongly recommended that reports be submitted by July 1.

The Student Health Insurance Plans are designed to defray expenses of those care situations which are beyond the scope of the Health Services; for example, laboratory and x-ray examinations, as well as hospitalization for illnesses or accidents of a more serious nature. The Plan extends for a full calendar year commencing September 1. Brochures outlining the details of the Plans, as well as the services by the University Health Services are mailed to each student prior to registration. Students are urgently requested to read the relevant brochure and keep it for reference. Whereas situations not covered within the Health Services or by the Insurance Plans are infrequent, an awareness of these possibilities will tend to lessen misunderstanding and disappointment. In such instances, students will be responsible for expenses which are not covered by the University's health program or its associated insurance policy. Similarly, students will be responsible for expenses which are not covered by alternative insurance programs substituted for the Brandeis University Student Health Insurance Plan or Student Dependent Plan.

Within the limitations of the insurance program, fees of physicians who are not members of the Health Services staff, laboratories and hospitals will be processed for payment only when consultations, laboratory or x-ray studies or hospitalization have been authorized by the University Health Services in advance on a form provided for this purpose. The University is not responsible for off-campus medical and hospital care sought by students or their parents on their own initiative, or for outside care or consultation which has not been authorized previously by the Health Services. The only exception to this is in case of an emergency, or illnesses or injuries occurring while away from the University, when such prior authorization is not feasible.

The Psychological Counseling Center

The Psychological Counseling Center, which is a part of the University Health Services, is currently located in Mailman House. It provides professional assistance to students who have personal or emotional problems. Those who wish such help may refer themselves directly to the Center. Their communications with the staff are held in strict confidence.

Admission

As a rule only well-qualified men and women who have completed the normal four-year program leading to the Bachelor's degree will be considered for admission to the Graduate School. Graduates of foreign schools and others who have completed the equivalent of a Bachelor's degree program may apply, describing the educational program they have completed.

Testing

Applicants for admission to the graduate programs in biochemistry, biophysics, history of American civilization, politics and psychology are required to take the Graduate Record Examination, including the aptitude test portion and preferably one advanced test in a field related to the proposed area of graduate study. Applicants for admission to the graduate program in psychology must also take the Miller Analogies Test. All other applicants for admission are urged to take the Graduate Record Examination. In order for the results of the Graduate Record Examination to be considered, the applicant should take the examination no later than January preceding the academic year for which application is made. Information concerning the Graduate Record Examination is available from the Educational Testing Service, 200 Nassau Street, Princeton, New Jersey 08540, or Box 1025, Berkeley, California 94704.

Foreign students, regardless of field of graduate study, are required to take the Test of English as a Foreign Language (TOEFL) unless English is their first language. This includes comprehensive testing in auditory comprehension, reading comprehension, writing, vocabulary, and grammar. Applications for admission to the test should be made to TOEFL, Educational Testing Service, Princeton, New Jersey 08540, U.S.A. The test is administered at various established centers abroad.

Application

Specific requirements for each graduate program are to be found under the appropriate headings in this catalog. Each applicant should consult these requirements before filing an application. A student may apply to only one graduate department or program. Applicants to the Graduate School should write to the Dean of the Graduate School of Arts and Sciences, stating which program of study he or she wishes to enter. A catalog and appropriate forms will be forwarded to the applicant. The "Application for Admission" and, if needed, the "Application for Financial Aid" should be completed and returned

in duplicate as soon as possible. The closing date for receipt of applications for admission is the first business day in March, though exceptions may be made. Applicants requesting financial aid should file as early as possible.

Applications for admission for the Spring Term must be filed by December 15. Students are not usually admitted at midyear, and those who do gain admission are not normally eligible for financial aid.

The applicant must arrange to forward, in duplicate, official transcripts of all undergraduate and graduate work. In addition, he must have forwarded, on forms provided by the Graduate School, two letters of recommendation, preferably from professors with whom the applicant has studied in the field of his proposed area of study. An applicant who has engaged in graduate study elsewhere should request at least one of the recommendations from a professor with whom he has done graduate work.

Applicants for admission to the following graduate programs must also submit samples of their work as indicated:

Comparative History—one paper, preferably in European history

English and American Literature—two samples of written work

Music Theory and Composition—samples of original work

Theater Arts—Dramatic Writing—one original script

Theater Arts—Design-Technical—a portfolio of sketches

All applications for admission must be accompanied by an application fee of \$15, payable by check or money order to Brandeis University. No application will be processed until this fee is paid.

Admission Procedure

All applications are considered on a competitive basis. The number of students admitted each year in each department is limited so that the Graduate School may operate effectively under its distinctive principles of individualized study and apprenticeship. Consequently, admission may sometimes be denied to qualified persons. Meeting the minimum standards of admission merely qualifies the applicant for a place in the group from which final selections will be made. Selections are based on the applicant's ability to do graduate work of high quality, as shown by: the distinction of his previous record, particularly in his proposed area of study; the confidential letters of recommendation submitted in support of his application; and his adaptability to the particular graduate programs offered by Brandeis University. In addition, knowledge of foreign languages, relevant practical experience in the field, samples of work, the results of the Graduate Record Examination, and indications of character are considered.

Each application for admission with all supporting records is first examined by the department or committee responsible for the graduate program to which the applicant seeks admittance. The department or committee recommends to the Dean of the Graduate School which applicants should be selected for admission and for financial aid. The Dean reviews all applications in the light of departmental recommendations, and informs each applicant of the results of the competition. Applicants for admission will be notified in April.

Acceptance

A student who has been accepted for admission to the Graduate School will be notified by a letter specifying the date by which he must accept the offer of admission and awards, if any. If a student selected for admission indicates that he does not intend to accept the offer, or if he fails to reply by the date specified, his admission offer becomes void and another applicant may be accepted in his place.

Brandeis University subscribes to the "Resolution Regarding Scholars, Fellows, Trainees and Graduate Assistants" of the Council of Graduate Schools in the United States. The resolution states:

"Acceptance of an offer of a graduate scholarship, fellowship, traineeship, or graduate assistantship for the next academic year by an actual or prospective student completes an agreement which both student and the graduate school expect to honor. In those instances in which the student indicates his acceptance prior to April 15 and subsequently desires to change his plans, he may submit in writing a resignation of his appointment at any time through April 15 in order to accept another scholarship, fellowship, traineeship, or graduate assistantship. However, an acceptance given or left in force after April 15 commits him not to accept another appointment without first obtaining formal release for the purpose."

Students who are accepted must provide the Graduate School Office with an official final transcript of their undergraduate record and of any graduate work in progress at the time of acceptance. In addition, students who are accepted *are required to complete and return a Medical Questionnaire and a health insurance form*, which will be sent with notification of acceptance. All acceptances are conditioned on subsequent approval by the University Health Office. All persons admitted to the Graduate School must give evidence of their physical and psychological capacity to carry on their studies.

If, after having been admitted, a student cannot attend, he should notify the Dean of the Graduate School as soon as possible. If such a student wishes

to be admitted for a subsequent academic year, he must request reactivation of his application at the appropriate time, and bring it up to date.

An applicant who has been denied admission may reapply in a later year, particularly if he has had further training which would strengthen his application or if he can submit additional letters of recommendations.

Admission to the Graduate School does not imply that the successful applicant has been accepted as a candidate for a graduate degree. Superior performance at Brandeis University is essential. Admission to candidacy for the M.A. or M.F.A. is granted by the graduate department or committee administering the program of study. Admission to candidacy for the Ph.D. is granted by the Graduate Council on the recommendation of the Department or Committee administering the program of study.

Readmission

Admission is valid only for one academic year. A student's record is reviewed annually, and he may be denied readmission. Students completing the requirements for the M.A. or M.F.A., and students who already hold a Master's degree but who have not yet been admitted to candidacy for the doctorate, must make formal application for readmission by the first business day in April of each year if not requesting financial aid, or by the first business day in March if requesting financial aid. The application for readmission must be filed with the Graduate School Office.

Foreign Students

Graduates of foreign colleges and universities who have the equivalent of an American Bachelor's degree, and foreign students who have been graduated from American universities may compete for admission and financial assistance.

In order to ascertain the eligibility of the candidate, Brandeis University requires that each applicant file a *Preliminary Request for Application* form which may be obtained by writing to either the Graduate School of Arts and Sciences or the Office of International Programs any time before September 1 of the year preceding the anticipated admission date. This information will be evaluated and the application form itself will be sent to those who qualify.

Final applications must be completed and returned by March of the year in which the student seeks fall admission. Successful applicants will be notified as soon as possible.

Entrance Examinations. All applicants whose major language of instruction is not English must take the Test of English as a Foreign Language

(TOEFL); thorough competence in English is required for study at Brandeis. All applicants are urged to take the Graduate Record Examination (GRE). They should consult this catalog for the departments which may *require* this examination. For information concerning the administration of both these examinations, applicants should write to the Educational Testing Service, Princeton, New Jersey 08540.

Financial Aid. Financial aid in the form of scholarships, fellowships, teaching assistantships and research assistantships is available to only a few of the most outstanding students. In any case, the total assistance offered usually covers only a small proportion of the student's total annual expense. Hence the student, when applying for admission, should indicate his means of financial support. At least \$3,000 in United States dollars is necessary to cover living costs for the nine month academic year, exclusive of expenses for tuition, travel and summer or vacation periods.

A small number of Wien International Fellowships may be granted to outstanding doctoral candidates.

Employment. The regulations of the United States Immigration and Naturalization Service limit strictly the amount of paid work that a student from abroad may do. The student should be aware of this restriction in making his financial plans. During the summer vacation, however, the Immigration Service usually permits the student to obtain work to support himself, and even sometimes to meet some personal expenses for the following academic year. Students must petition on special United States government forms, through the Office of International Programs, for permission to accept such employment.



Academic Regulations

Registration

Every resident student must register in person at the beginning of each semester, whether the student is attending regular courses of study, carrying on research or independent reading, writing a thesis or dissertation, or utilizing any academic service or facility of the University. Students who have completed their residence requirements and who wish to utilize any academic service or facility of the University must also register.

There is a charge of \$10.00 if registration is not completed at the time specified in the Academic Calendar for the Graduate School.

Registration consists of payment of all fees for the semester and filing a program card and other required forms duly completed.

Program of Study

Before filing his Program Card, the student should plan his program of study in consultation with the chairman of his department. All courses for which the student registers for credit must be listed on the Program Card.

Audited courses must also be listed, noted as "audit," and the Program Card must be signed by instructors of such courses.

A graduate student may not normally register for an undergraduate course (numbered below 100) in his own area for degree or residence credit unless he secures the signed approval of both the instructor of that course and his department chairman. The student must then petition the Dean of the Graduate School for the desired credit, and must receive his approval before or at the time of registration. Credit will not be given for undergraduate courses taken to make up deficiencies in the student's preparation for a graduate program of studies, nor will credit ordinarily be given for language courses that are not part of the student's program of studies. Under no circumstances may a student receive credit toward completion of degree or residence requirements for courses undertaken to aid in the completion of language requirements. Scholarship students may not apply their scholarships toward the remission of tuition for undergraduate courses taken to remedy deficiencies. The completed Program Card must be signed by the department chairman before submission at registration, and the department chairman will certify whether the program of study is full-time or part-time and, if part-time, whether one-quarter, one-half, or three-quarters time. Full-year courses must be re-entered on the program card at Spring-Registration, and ordinarily they may not be dropped at midyear. A student wishing to

drop a full-year course at midyear must petition the Dean of the Graduate School for permission, after receiving the written approval of the instructor of the course and of the chairman of his department. No student may register at midyear for a full-year course without the written approval of the instructor of the course and his department chairman.

Auditing Courses

The privilege of auditing courses without fee is extended to all regularly enrolled graduate students except those classified as special students. Special students may audit courses by paying for them at the same rate as those taken for credit. No course may be audited without the permission of the instructor. An auditor is merely a listener. He may not take examinations or receive evaluation from the instructor. No credit is granted for an audited course.

Change of Program

A registered student who wishes to drop or add a course or alter his program of study must obtain a Course Change Card from the Graduate School Office and return it when properly filled out. Credit will not otherwise be given for the courses changed. In addition, a student must change his program within the specified time limits stated in the current academic calendar, or he will be subject to a \$10.00 fine.

Registration in Terms of Time

An advanced student—one who has completed one full year of residence, either by graduate work at Brandeis or by receiving credit for graduate work done elsewhere—may register in terms of time, subject to the signed approval of his department chairman. His Program Card must indicate that he is registering full-time or a specific fraction thereof (one-quarter, one-half, or three-quarters).

Registration in terms of time is a device that helps to individualize programs of study and permits increased freedom for independent research for the advanced graduate student. Registration in terms of time frees the student to pursue a program of study that partially accepts or bypasses altogether the system of formal courses, although a student registering in terms of time will usually register for an advanced research or dissertation course. His time will be spent in such research and reading as will be most beneficial to his development as a scholar.

Absence from Examinations

A student who is absent from a midyear or final examination without an accepted excuse will receive a failing grade for that examination. No student may be excused from such examination unless for emergency or medical reasons, nor may he be excused if he was able to notify the instructor in advance and failed to do so. Cases involving absence are referred to the chairman of the department. The department will decide whether a make-up examination shall be allowed, and will notify the Dean of the Graduate School. The examination must be taken within six weeks of the opening of the next semester.

Grades and Course Standards

Graduate students are expected to maintain records of distinction in all courses. Letter grades will be used in all courses in which grading is possible. Courses graded "Non-credit" are those which carry no credit but which are required of the student. In thesis or research courses, if a letter grade cannot be given at the end of each semester or academic year, "Credit" or "No Credit" may be used.

"No Credit" and any letter grade below "B-minus" are unsatisfactory grades in the Graduate School. A course in which the student receives an unsatisfactory grade will not be counted toward graduate credit.

At the end of each academic year the Registrar of the Graduate School will issue to all registered students a report of their grades and of degree requirements that have been completed satisfactorily.

Incompletes

A student who has not completed the research or written work for any course may receive a grade of "Inc." (incomplete) or a grade of failure at the discretion of the instructor in the course. A student who receives a grade of "Inc." must satisfactorily complete the work of the course in which the "Inc." was given in order to receive credit for the course and a letter grade. An "Inc.," unless given by reason of the student's failure to attend a final examination, must be made up no later than the end of the term following the term in which it was received. When failure to take a final examination has resulted in an "Inc." resolution of that grade to a letter grade must occur within six weeks of the beginning of the next academic semester. If a student requires additional time to settle an incomplete grade, he may petition the Dean of the Graduate School for an extension of time, provided the petition is signed by the instructor of the course and by the department chairman. Such a petition must be filed prior to the expiration of the deadline for making up an incomplete.

Credit for Work Done Elsewhere

Graduate work taken elsewhere may not be counted toward fulfillment of the residence requirement at Brandeis University for the degree of Master of Arts, although a department may accept work taken elsewhere in partial fulfillment of specific course requirements for the degree. Not more than one semester of residence credit for work taken elsewhere may be counted toward fulfillment of the residence requirement for the degree of Master of Fine Arts. Not more than one year of residence credit for work taken elsewhere may be counted toward fulfillment of the residence requirement for the degree of Doctor of Philosophy.

A student admitted to a Ph.D. program at Brandeis University who has done graduate work elsewhere may file an application to have his work at that institution counted toward fulfillment of residence requirements. However, language requirements, qualifying and comprehensive examinations, the dissertation and the final oral examination, and other such requirements must be fulfilled while enrolled at Brandeis.

To be eligible to receive credit toward fulfillment of residence requirements for work taken elsewhere, a student must complete at least one semester's residence at Brandeis as a full-time student. He may then file an "Application for Credit for Graduate Work Done Elsewhere." The completed application should be submitted to the Graduate School Office, which will advise the student of the action taken on his application. An applicant will not necessarily be given the credit he requests. Each department reserves the right to require of any student work in excess of its minimum standards to assure thorough mastery of his area of study. In any case, every candidate for the Ph.D. degree must complete at least one year in residence at Brandeis as a full-time student, or the equivalent thereof in part-time study.

Residence Requirements

Residence requirements for all graduate degrees are computed by determining the amount of registration for credit and the tuition charges. Part-time students and teaching assistants pursuing part-time programs of study for credit complete their residence requirement when their fractional programs (one-quarter, one-half, three-quarters) total the amount required of a full-time student for any given degree.

Master of Arts

The minimum residence requirement for all students is one academic year on a full-time graduate credit program at the full tuition rate, or the equivalent thereof in part-time study.

Master of Fine Arts

The minimum residence requirement for all students is three academic semesters on a full-time graduate credit program for each semester, at the full tuition rate for each semester, or the equivalent thereof in part-time study.

Doctor of Philosophy

The minimum residence requirement for all students is two academic years on a full-time graduate credit program for each year, at the full-tuition rate for each year, or the equivalent thereof in part-time study.

Full-Time Resident Students

A full-time student is one who devotes his entire time, during the course of the academic year, to a program of graduate work at Brandeis University, to the exclusion of any occupation or employment. In exceptional cases, however, a student may accept outside employment with the approval of his department chairman.

A full-time program may include a combination of teaching and research assistance, work leading to the fulfillment of degree requirements, such as preparation for qualifying, comprehensive, and final examinations, or supervised reading and research, or the writing of M.A. theses and Ph.D. dissertations, as well as regular course work.

A full-time resident student may take as many courses for credit in any semester as are approved by his department chairman, but no student may receive credit for, or be charged for, more than a full-time program in any semester. Thus the minimum residence requirement for any degree may not be satisfied by an accelerated program of study or by payment of more than the full-time tuition rate.

Ph.D. candidates and students for whom the M.A. and M.F.A. degrees are terminal degrees may continue as full-time students on completion of their residence requirements by registering at the post-residence fee rate (see p. 38).

Part-Time Resident Students

A part-time student is one who devotes less than his entire time to a program of graduate work at Brandeis University. He may register for a credit program of one-quarter, one-half, or three-quarters time. A part-time student may engage in outside employment with the permission of his department chairman, who may restrict the time permitted for such employment.

Students wishing to pursue part-time resident study leading to a graduate degree must explain in writing, at the time they seek admission, why full-time

study is not possible. An enrolled student receiving financial aid from the University, who wishes to change his status from a full-time to a part-time resident, must file with the Graduate School Office an explanation of why full-time study is no longer possible.



Post-Resident Students

A graduate student who has completed residence requirements and who registers in order to utilize academic services or University facilities while completing degree requirements is a post-resident student.

Special Students

Properly qualified persons who wish to audit or to take courses without working for a degree will be admitted. Special students are not eligible for University loans, scholarships, fellowships, teaching or research assistantships, nor will they be considered for resident counsellorships. A special student who later wishes to change his status to that of a part-time or full-time student working for a degree must apply for admission as a resident student. He must also file a special petition if he wishes credit to be accepted for any courses taken at Brandeis as a special student. Credit for such course work may be granted in exceptional cases.

Leave of Absence

Students who have not completed their residence requirements may petition for leave of absence. The petition must have the approval of both the chairman of the department and the Dean of the Graduate School. Leave of absence up to one year will normally be granted to students in good academic standing who present compelling personal reasons or need to do work off campus in connection with their graduate studies. Time spent on authorized leave of absence will not be deducted from the maximum time permitted to complete degree requirements.

If for any reason a student must extend a leave of absence, he must request such extension in writing before his leave of absence expires. Failure to do so will result in being automatically dropped from the Graduate School roster.

Continuation

A graduate student who has completed residence requirements and who is not registered during the period in which he is completing degree requirements is considered a Continuation Student. A student in this category is not eligible for a leave of absence. [See Fees, p. 39]

Withdrawal

A student who wishes to withdraw from the Graduate School at any time before the end of the academic year must give immediate written notice to his department chairman and to the Dean of the Graduate School. Failure to comply with this procedure for withdrawing may subject the student to dishonorable discharge, refusal of readmission, cancellation of the privilege of securing an official transcript of his record, and, in the case of a student withdrawing within 30 days of the beginning of classes, loss of eligibility for partial refund of tuition. Such a student must pay tuition for the full semester. Permission to withdraw will not be granted if the student has not discharged all financial indebtedness to the University or has not made arrangements for subsequent payment to the satisfaction of the Controller's Office.

Exclusion, Dismissal or Expulsion

The University reserves the right to dismiss or exclude at any time any student whose character, conduct, academic standing or financial indebtedness it regards as undesirable, through disciplinary procedures established in the

Graduate School. Neither the University nor any of its Trustees or officers shall be under any liability whatsoever for its disciplinary action, exclusion or dismissal.

The University also reserves the right to revoke, cancel or reduce at any time any financial or honorific award made to any graduate student, for character, conduct, academic standing or financial indebtedness regarded by the University as undesirable; neither the University nor any of its Trustees or officers shall be under any liability whatsoever for cancelling, revoking or reducing any award.

General Degree Requirements

The following general requirements apply to the awarding of graduate degrees in all areas of study. For the specific requirements of each program of study, students should consult the appropriate section of this catalog.

Master of Arts

In order to qualify for a Master's degree, the student must complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of twenty-four semester hours of approved study. Each course meeting three hours per week grants three credits per semester. Certain departments may at their option require more than twenty-four hours of graduate study. All departments offering Master's programs require that the candidate demonstrate a reading knowledge of at least one foreign language and pass satisfactorily a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. Where a thesis is required for the Master's degree, two copies must be submitted to the department chairman in final form no later than January 8 for a February degree or May 15 for a June degree.

The Master's degree must be earned within four years from the inception of graduate study at Brandeis University.

Master of Fine Arts

In order to qualify for the degree of Master of Fine Arts in Music, the candidate must complete with distinction thirty-six semester hours of course work at the graduate level, and must meet the specific requirements for the degree set forth under the Music Department, *Requirements for the M.F.A. Degree*, in a later section of this catalog. Two copies of the thesis or composition must be submitted to the department chairman in final form no later than January 8 for a February degree or May 15 for a June degree.

In order to qualify for the degree of Master of Fine Arts in Theater Arts, the candidate must complete forty-eight hours of course work at the graduate level, and must meet the specific requirements for the degree outlined under Theater Arts, *Requirements for the M.F.A. Degree*, in a later section of this catalog. Students enrolled for specialization in play-writing must submit two copies of a play in final form, in lieu of a thesis, to the department chairman no later than January 8 for a February degree or May 15 for a June degree.

The Master of Fine Arts degree must be earned within five years from the inception of graduate study at Brandeis University.

Doctor of Philosophy

In order to qualify for the degree of Doctor of Philosophy, a student must ordinarily complete a minimum of three years of graduate study, including two full years of residence and a third year devoted to the preparation of a doctoral dissertation. Under certain conditions credit for advanced standing will be granted for work taken in residence in graduate schools of other universities. Each Department or Committee reserves the right to require prospective candidates for the degree to perform work in excess of its minimum standards to assure thorough mastery of the area.

Prospective candidates, except in American Civilization, Philosophy and Psychology, must demonstrate proficiency in at least two foreign languages. In all areas of study the student must satisfactorily pass a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. In addition, all prospective candidates must write a doctoral dissertation and defend it in a final oral examination.

To be eligible for award of the Ph.D. degree in any given year, the student must have (1) been admitted to candidacy for the doctorate, (2) completed all residence requirements, and (3) passed all language and qualifying examinations, by the close of the semester preceding the semester in which the degree will be conferred. Doctoral dissertations must be submitted to department chairmen by December 1 for February degrees, and April 1 for June degrees. In addition, notification that the doctoral dissertation has been approved and that the dissertation examination has been passed must have been communicated to the Dean of the Graduate School no later than January 8 in the case of February degrees or May 15 in the case of June degrees.

Students entering Brandeis University with no previous graduate work must earn the Doctor's degree within eight years from the inception of study. Students who are granted credit for a year of graduate work completed elsewhere must earn the degree within seven years from the inception of their study at Brandeis.

Language Requirements

A reading knowledge of at least one foreign language is required of all students engaged in programs of study leading to the M.A. degree. A reading knowledge of at least two foreign languages is required of all students engaged in study leading to the M.F.A. in Music. Students in the M.F.A. program in Theater Arts with a specialization in Dramatic Writing must demonstrate a reading knowledge of at least one foreign language. A reading knowledge of at least one foreign language is required of all students engaged in programs of study leading to the Ph.D. degree. Several programs have additional language requirements. Each department or program determines which languages are acceptable as satisfying the foreign language requirements. For specific requirements of each program, consult the appropriate section of this catalog.

Students are expected to satisfy the language requirements as soon as possible. The completion of the language requirements at another university does not exempt the candidate from the Brandeis requirements.

A student who has not passed an examination in at least one foreign language by the end of his first year of study will not be eligible for financial aid from the University for the second year.

Many departments require that language examinations be passed at an earlier time than specified in these provisions. Special requirements will be found in the departmental statements included in this catalog.

Admission to Candidacy

A student who (a) has demonstrated a knowledge and mastery of the subject matter of his field at a level satisfactory to his Department or Committee; (b) has passed all departmental qualifying examinations; (c) has indicated a capacity for independent research of high quality; and (d) has satisfactorily completed all specific Department or Committee requirements for admission to candidacy may, at the recommendation of the Department or Committee, be admitted under the rules of the Graduate Council to candidacy for the degree of Doctor of Philosophy. In order to be eligible for the award of the degree, the student must be admitted to candidacy at least one semester before the degree is awarded.

Application for Graduate Degrees

Candidates for the M.A., M.F.A., and Ph.D. degrees must file with the Graduate School Office an application for the degree no later than December 1 for a February degree and no later than April 1 for a June degree of the

academic year in which the degree is to be conferred. Upon the written recommendation by a candidate's Department or Committee that his application be approved, his record will be reviewed by the Graduate Council which recommends him to the University's Board of Trustees for the degree. In case of failure or withdrawal from candidacy in any year, the student must reapply by filing a new application in a later year.

Dissertation and Final Oral Examination

Two copies of the doctoral dissertation, as well as an abstract of the dissertation not to exceed six hundred words in length, should be submitted to the department or committee chairman no later than December 1 for a February degree and April 1 for a June degree of the academic year in which the Ph.D. degree is to be conferred. The style and format of all dissertations are determined by the respective departments. The chairman will then appoint two or more readers, besides the principal supervisor, to read the candidate's dissertation. Certification of the approval of the dissertation by these readers will be communicated to the Dean of the Graduate School and the chairman of the Department or Committee. The chairman will then schedule a final oral examination and notify both the Dean of the Graduate School and the candidate of the time and place of the examination at least three weeks prior to the scheduled date of the dissertation defense.

The dissertation, when approved by the readers, must then be deposited in the department where it will be available to all interested members of the faculty for at least two weeks prior to the final oral examination.

The Dean of the Graduate School will publish in the *University Gazette* the time and place of a candidate's final oral examination and the title of his doctoral dissertation. The final oral examination will be open to any member of the faculty engaged in graduate instruction and to invited faculty members of other institutions.

The Examining Committee, recommended by the department chairman and approved by the Dean of the Graduate School must be composed of a minimum of three faculty examiners. At least one member of the committee shall be from a graduate area outside the student's own, though preferably from a related area.

The examination may be restricted to a defense of the dissertation, or may cover the whole field of the dissertation. The candidate will be notified by his Department or Committee of his responsibility for coverage at the examination.

A report, signed by the Examining Committee, certifying the candidate's successful performance on the final oral examination, will be submitted to

the Dean of the Graduate School no later than January 8 for a February degree or May 15 for a June degree of the year in which the degree is to be conferred.

Deposit and Publication of Dissertation

By January 15 for February degree candidates, or May 22 for June degree candidates, the candidate must deposit two copies of his finished dissertation, including the original typescript, in a state suitable for microfilm and Xerox publication. Both copies of the dissertation must have the signed approval of the dissertation supervisor and readers. One copy will be retained by the library, the other by the department, both in bound form. The candidate must also submit two copies of an abstract of the dissertation, not exceeding 600 words, which has been approved by the dissertation supervisor.

A detailed statement of the Graduate School publication regulations is available from the Graduate School Office. See also the statement in this catalog, under *Fees*, on the Final Doctoral Fee.

Fees

Payment of tuition and other fees due on the day of registration is a part of the registration procedure. A student who is not prepared to pay such fees on the day of registration will be refused the privilege of registration. A registered student who defaults in the payment of a subsequent indebtedness to the University shall be subject to suspension, dismissal and refusal of a transfer of credits or issuance of a transcript. If the student is a degree candidate, his name will be stricken from the rolls. A student who has been suspended or dismissed for nonpayment of indebtedness to the University may not be reinstated until such indebtedness is paid in full.



Application Fee: \$15.00. Payable by all applicants for admission at the time the application for admission is submitted and is not refundable. Checks and money orders should be made payable to the order of Brandeis University. No application for admission will be processed until this fee is paid. This fee is not required of Brandeis graduates.

Tuition Fee: The fees for tuition in the Graduate School for 1972-73 are as follows:

Full-time resident students: \$2,900 per year, or \$1,450 per semester.
Part-time resident students:

<i>Per Semester</i>	<i>Per Year</i>	<i>Fraction Program of Study</i>
\$1,087.50	\$2,175.00	Three-quarters
\$ 725.00	\$1,450.00	One-half
\$ 362.50	\$ 725.00	One-quarter

Special Students: \$362.50 per course per semester.

In view of constantly increasing costs of education, a student may expect one or more tuition increases during his academic career.

Post-Residence Fee: Students who have completed their residence requirements and who wish to continue in residence to utilize any academic service or University facility must register at the usual tuition rates. Graduate students whose tuition is not being paid from scholarship or fellowship funds awarded by the University or other sources may petition the Dean of the Graduate School for a reduction of the post-residence fee to \$250. Students who continue to utilize any academic service or University facility after having completed residence, but who have failed to register, are subject to disciplinary action by the Dean of the Graduate School. A student who is eligible for registration on the post-residence basis may file a program card for full-time study, in terms of courses or in terms of time or any combination thereof, provided his department chairman approves of the program of study as being a full-time program and signs the program card.

Mixed Tuition Fee: In the event that a student needs to register for only a part-time program (one-quarter, one-half, or three-quarters) in order to complete his residence requirements, but wishes to register for additional courses or take a fuller program of study, he shall be charged for the part-time program needed to complete his residence, plus the post-residence fee.

Summer Tuition Fee: Brandeis University does not conduct a regular summer school session. However, special courses of study on an individual basis may be arranged for regular students. The tuition for graduate students who remain in residence for special summer programs of a twelve week duration is \$500.00, and of an eight week duration, \$350.00.

Late Registration Fee: \$10.00. Payable for failure to complete registration at the time announced by the Graduate School Office. (Consult the Academic Calendar.)

Change-of-Program Fee: \$10.00. Payable by any graduate student who wishes to change his program of study later than two weeks after the first meeting of classes in each semester.

Continuation Fee: \$20.00. Payable annually by graduate students who have completed residence requirements and who are not registered during the period in which they are preparing for the completion of degree requirements. Students in this category are not eligible for leave of absence.

Master's Fee: \$50.00. A candidate for the M.A. or the M.F.A. who is subject to the Continuation Fee and who submits a Master's thesis or takes a qualifying examination in any semester following one in which he has not been in residence, shall pay the Master's Fee. The fee is chargeable only once. The Continuation Fee will be applied toward payment of the Master's Fee.

Final Doctoral Fee: \$250. This fee covers all costs for the year in which the Ph.D. degree will be conferred, including the costs for the microfilm publication of the doctoral dissertation, the publication of the abstract of the dissertation in *Dissertation Abstracts*, copyright protection for the author if desired, issuance of a Library of Congress number and appropriate library cards, binding two copies of the dissertation, one for use in the University Library, and one Xerox-printed copy in book form for the author. The Final Doctoral Fee also covers the rental expenses for academic robes for the candidates at graduation and cost of the diploma. Students who have been in residence in their final year may deduct any tuition charges which they may have paid to the University in that final year. Students who have paid the Continuation Fee in the final year may deduct that fee from the Final Doctoral Fee.

NOTE: All candidates for the Ph.D. degree must pay the \$250 Final Doctoral Fee prior to the receipt of their degrees.

Reinstatement Fee: \$10.00. Payable by a student who, after suspension or dismissal, has been reinstated with the consent of the Dean of the Graduate School.

Transcript Fee: \$1.00. Students, former students and graduates who request official transcripts of their records in the Graduate School are charged \$1.00 for each copy issued after the first one, which is issued free of charge. Requests by mail for transcripts must be accompanied by a check in the correct amount, payable to Brandeis University.

Diploma Fee: \$10.00. Payable by candidates for the M.A. and M.F.A. degrees.

Students Health Plan Fee: \$96.00. Payment of the Health Plan Fee entitles the graduate student to participate in the benefits of the Health Insurance Program. The fee is payable at registration and no portion is refundable.

Exceptions: The University Student Health Plan is optional for special students.

Dependent Coverage: Although the health services offered at Stoneman Infirmary are not extended to dependents of students, an optional family health insurance plan is available to married students for a fee of \$420.00. Special students are not eligible for this plan.

Refunds

The only fee which may be refundable, in part, is the tuition fee. No refund of the tuition fee will be made because of illness, absence or dismissal during the academic year. If a student withdraws, he may petition the Dean of the Graduate School for a partial refund of tuition in accordance with the following:

1. *Tuition:*

Withdrawal: Before the opening day of instruction: 100% of semester tuition.

On or before the second Friday following the opening day of instruction: 75% of semester tuition.

On or before the fifth Friday following the opening day of instruction: 50% of semester tuition.

After the fifth Friday following the opening day of instruction: no refund.

2. *Scholarships:* In the case of a scholarship student who withdraws, the student's account will be credited with the same proportion of the semester scholarship as charged for tuition: 25% if the student leaves on or before the second Friday; 50% on or before the fifth Friday; and, 100% thereafter. The balance of the scholarship will be cancelled.

All refunds are subject to review and final approval of the Controller and will be disbursed by him upon written request.

Financial Assistance

To help students whose records indicate scholarly promise, the University makes available a variety of awards and work opportunities. No student is eligible for aid unless he files with the Graduate School Office an "Application for Financial Assistance" by the first business day in March. In exceptional circumstances applications received from prospective students later than this date may be given consideration. All scholarships and fellowships are granted for one academic year; therefore, a registered student who holds a scholarship or fellowship must apply for a renewal by filing the "Application for Financial Assistance" by the first business day in March.

All awards are granted and accepted with the understanding that they may be revoked or reduced at any time for conduct or academic standing that may be regarded as undesirable.

Ordinarily, no student may hold a fellowship, scholarship, or teaching assistantship for more than two years of study for the M.A. degree, for more than three years of study for the M.F.A. degree, or for more than four years of study for the Ph.D. degree. No student may receive a scholarship, fellowship, or teaching assistantship after one year of study at the post residence fee. Part-time students are ineligible for fellowship awards, and are not ordinarily considered for scholarship awards. Teaching assistants who are part-time students may apply for scholarships. Priority in making awards is given to full-time students and teaching assistants.

In the case of a student receiving financial aid from Brandeis University, whether in the form of a teaching assistantship, scholarship or fellowship, the approval of the Dean of the Graduate School is required, in addition to the approval of the department chairman, before the student may engage in outside employment. Approval is not normally granted in the case of full-time students receiving financial aid from the University.

Scholarships

A scholarship is an award, on grounds of scholarly ability and need, of financial credit that may be used exclusively for remission of tuition fees. Full scholarships in the value of \$2,900 and partial scholarships are available. Scholarship students are liable for all but tuition charges.

Fellowships

A fellowship is an academic award of honor to outstanding students of good character to help them in furthering advanced study and research. Fellowships carry stipends ranging up to \$2,500 in the graduate programs in the humanities and social sciences and up to \$4,000 in the graduate science programs. The amount of the stipend depends on the quality of the student's record and performance; need is also considered in most cases. A fellowship recipient must pay tuition fees unless he is also awarded a scholarship in an amount covering tuition. No services are required of students for fellowship or scholarship awards.

Teaching Assistantships

Teaching assistants are resident students in the Graduate School who do part-time teaching as part of their training and are paid a stipend in return for services rendered. The University has established teaching assistantships to enable distinguished graduate students to gain teaching experience while continuing their studies. Teaching assistants are eligible for other awards, including scholarships and fellowships.

A full-time student who is a teaching assistant receives residence credit for, and is charged tuition for, that fraction of his program spent as a student in fulfillment of degree and residence requirements.



First-year graduate students are eligible for appointment as teaching assistants in the sciences. In other areas, however, first-year students are rarely appointed. Foreign students are not normally eligible for appointment as teaching assistants in their first year of graduate work unless they have had training at another American university.

Teaching assistantship appointments are made on the authority of the President of the University by the Dean of the Graduate School who, in turn, acts on the recommendation of a student's department chairman. A graduate student who is interested in being appointed as a teaching assistant should write or see his chairman. Appointments are made for periods of one year or one semester, but are renewable. All awards of teaching assistantships to incoming students are conditioned on an interview with a University representative, prior to registration. The University reserves the right to terminate any appointment at any time for due cause. Conduct, character or academic standing that is regarded as undesirable may constitute cause, but the University need not assign any reason for the termination of an appointment at any time. All teaching assistantship appointments are made and accepted with this understanding, and neither the University nor any of its Trustees or officers shall be under any liability whatsoever for the summary termination of a teaching assistantship.

Research Assistantships

Research assistantships, which sometimes carry stipends in excess of \$4,000, are available in the science areas. First-year graduate students are not normally eligible for appointment. Application should be made to the chairman of the Department or Committee administering the graduate program.

Loan Funds

Brandeis University participates in the Government Insured Loan Program. This permits graduate students registered for at least a half-time program and who are U. S. citizens, nationals, or in the United States for other than a temporary purpose to borrow up to \$1,500 in any academic year but no more than a lifetime total of \$7,500 to defray costs of education. These loans are also available to the student from some lending institutions in his or her home state. The University will provide from its own resources, GILP loans on the recommendation of the graduate program and approval of the Dean of the Graduate School. Special students are not eligible for loan funds through the University.

Resident Counselorships

A limited number of positions are available for both married and unmarried men and women as counselors in the University residence halls. Applications for these positions may be obtained from the University Residence Halls Office and should be returned no later than April 15. Appointments are made by the Residence Hall Officer on recommendation of the Dean of the Graduate School on or before June 25.

Office of Student Employment

The Office of Student Employment assists students who need and desire part-time work. Students seeking part-time work should register with the Office of Student Employment. New students are not assigned part-time work prior to arrival on campus.

Areas of Study and Courses

All courses meet for three hours a week unless the course description indicates otherwise. The presence of "a" in the course number indicates a half course given in the Fall Term; "aA" indicates a full course given in the Fall Term; "b" indicates a half course given in the Spring Term; "bB" indicates a full course given in the Spring Term; "aR" indicates a course given in the Spring Term, "bR," a course given in the Fall Term which is identical with an "a" or "b" course of the same number given in the Fall and Spring Terms respectively; the use of "c" after a course number indicates that the course is given as a half course but meets throughout the year.

The University reserves the right to make any necessary changes in the offerings without prior notice.

American Civilization

See History of American Civilization (page 99).

Anthropology

Objectives

The graduate program in anthropology is designed primarily to train students at the doctoral level. The objective is to provide the student with a broad

understanding of the four major fields of anthropology, with particular stress on ethnology and social anthropology, and to prepare the student for independent research and scholarship. Accordingly, there is a strong emphasis on training in comparative work and field work, which are integral parts of the doctoral program.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Students need not have an undergraduate major in anthropology or sociology-anthropology. If admitted, however, the student without previous training in anthropology may be required to take additional courses, as determined by the department, to complete his residence requirements. Students should have a reading knowledge of one foreign language.

Faculty

Associate Professor DAVID KAPLAN, *Chairman*: Economics. Method and theory. Mexico.

Professor HELEN CODERE: Method and theory. Economic anthropology. Primitive art. Africa.

Professor ROBERT A. MANNERS: American Indians. Modern cultures. Method and theory. Africa.

Professor ALEX WEINGROD: Modernization. Peasant societies. Mediterranean.

Associate Professor GEORGE L. COWGILL: Archaeology. Mathematical and computer methods in anthropology. Early civilizations, especially Mesoamerica.

Associate Professor ROBERT C. HUNT: Social anthropology. Modernization. Mesoamerica.

Associate Professor MARGUERITE S. ROBINSON: Social organization. South Asia.

Associate Professor BENSON SALER: Culture and personality. Primitive philosophies and religion. Formal analysis. Middle America. South America.

Assistant Professor JOAN BAMBERGER: Social anthropology. Ritual and myth. South America.

** Assistant Professor DAVID JACOBSON: Social Anthropology. Urban social organization. Africa.

** On leave, Fall Term, 1972-73.

Assistant Professor DAVID A. HERR: Physical anthropology. Primate studies.
Assistant Professor JUDITH IRVINE: Ethnography of communication. Linguistics. Africa.

Assistant Professor E. CRAIG MORRIS: Archaeology. South America.

Lecturer TIMOTHY ASCH: Film and tape in field research. Director, Center for Documentary Anthropology.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. However, the M.A. degree will be awarded upon successful completion of the following requirements: a minimum of twenty-four course credits, a high passing grade in a written qualifying examination in cultural anthropology, demonstration of proficiency in one foreign language, and a research paper based on a subject chosen by the student in consultation with his adviser.

Doctor of Philosophy

Admission to the Program. Students who complete the first year qualifying examination at a high level will be admitted to the Ph.D. program. Students with an M.A. in anthropology from other institutions, or with a minimum of a full academic year of graduate course work in anthropology from other institutions, may be admitted as prospective candidates for the Ph.D. degree. After a minimum of one semester's work, the department may, at its discretion, grant the student transfer credit of up to one year toward the Ph.D. residence requirements. In most instances, transfer students will be required to pass the first-year qualifying examination, but, at the discretion of the department, this may be waived.

Program of Study. During their first year of residence, students are assigned to an adviser with whom they design their course and research program. Maximum flexibility is encouraged regarding the choice and timing of course work. Doctoral candidates must complete two years of residence at Brandeis, and a minimum of forty-eight hours of credits. Work done at other institutions may be counted as part of residence, as stipulated above and in the general rules of the Graduate School. At least thirty-six course credits must be in anthropology.

Students concentrating in cultural anthropology select areal and topical courses in their field of special interest. It is expected that students will attain a scholarly competence in at least one culture area and a topic of study. In addition, students are required to pass course examinations in statistics, physi-

cal anthropology, archaeology, and linguistics. The pre-doctoral examination in cultural anthropology, normally given following two or three years of residence, includes questions based on the student's particular areal and topical interests.

Students concentrating in archaeology must meet most of the same requirements as those concentrating in cultural anthropology. They will be expected to pass the first-year qualifying examination in cultural anthropology. The pre-doctoral examination will emphasize archaeology, but will also include other fields of anthropology.

Language Requirement. For Ph.D. candidates, the foreign language requirements include the satisfactory completion of the M. A. language examination and, in addition, a research paper based upon sources in a foreign language.

Summer Training Program. A selected group of students in the Ph.D. program will be invited each year to participate in a summer field training program under the direction of a faculty member. No student will be admitted to this program unless he has passed the qualifying examination in cultural anthropology.

Admission to Candidacy. A student is admitted to candidacy on satisfactory completion of the following: the general qualifying examination (where required); an examination in at least one foreign language; forty-eight hours of course credits; and a predoctoral examination which may cover any aspects of anthropology and tests the scope of the student's knowledge and his ability to integrate that knowledge.

Field Work for the Dissertation. As soon as possible after qualifying for candidacy for the Ph.D., the candidate will be expected to begin a full year of field research, which will ordinarily form the basis of his dissertation.

Dissertation and Defense. The degree of Ph.D. will be awarded only after successful defense of the dissertation.

Courses of Instruction

ANTHROPOLOGY 100a. Interdisciplinary Pro-Seminar: The Family in Latin America

See Latin American Studies 100a for description

Miss Bamberger, Messrs.
Vanger and Yglesias

ANTHROPOLOGY 102a. Anthropological Linguistics I

A general consideration of language in an anthropological context; language and culture; ethnography of speaking; speech communities and language contact; linguistic evidence in the study of prehistory.

Mrs. Irvine



ANTHROPOLOGY 102b. Anthropological Linguistics II

Training in the recording and analysis of spoken languages with emphasis on non-Indo-European languages. *Mrs. Irvine*

*ANTHROPOLOGY 103b. Language and Culture

Language, thought, and meaning; speech differences within societies; processes of change; expressive language and poetics. Considerable attention will be given to the nature and role of Afro-American language and speech. No previous training in linguistics required.

ANTHROPOLOGY 105a. Ritual, Myth and Symbol

A study of the social dynamics of ritual behavior, mythology and symbolism among primitive peoples. *Miss Bamberger*

*ANTHROPOLOGY 106b. Human Ecology

A study of the interrelationship between man and his environment. Emphasis will be given to prehistoric societies and contemporary primitive peoples.

ANTHROPOLOGY 109bR. Archaeological Methods

Basic archaeological procedures for reconnaissance, excavation, and analysis of data; some important aspects of primitive technology; a survey of recently developed instruments and techniques for finding, dating, and analyzing ancient materials; and problems in archaeological theory.

Laboratory exercises and field trips will give students practical experience with archaeological data. *Mr. Morris*

*ANTHROPOLOGY 110a. Physical Anthropology

An introduction to the methods and materials of physical anthropology. A brief, intensive survey of non-primate and human evolution and fossil man. A study of human adaptation and the distribution of modern man in terms of morphology, genetics, geographical distribution, culture and environmental factors.

• Not to be given in 1972-73.

ANTHROPOLOGY 111a. Primates

An intensive introduction to the study of non-human primates with emphasis on enthology and primate behavior. An enquiry into the evolution of human behavior from a primate matrix.

Mr. Horr

ANTHROPOLOGY 115a. Culture and Biology

Selected problems in the nature of culture in the light of the biological bases of human behavior.

Messrs. Horr and Kaplan

***ANTHROPOLOGY 121a. Quantitative Techniques in Anthropology**

An introduction to statistical and other formal methods in anthropology, including set theory, probability, cross-cultural methodology, and computer techniques.

***ANTHROPOLOGY 121b. Mathematical Methods in Anthropology**

A continuation of Anthropology 121a, including more advanced statistical methods, and consideration in depth of anthropological applications.

Prerequisite: Anthropology 121a or the equivalent.

ANTHROPOLOGY 123a. Archaeology and Prehistory

A study of man's prehistoric cultures and the concepts and methods used by archaeologists in obtaining and interpreting data about these early cultures.

Mr. Morris

ANTHROPOLOGY 124a. Civilizations of Mesoamerica

Development of Prehispanic culture of Mesoamerica from the earliest agricultural settlements through Olmec, Teotihuacan and classic Maya to the Aztec state.

Mr. Cowgill

ANTHROPOLOGY 127aR. The First Complex Societies and Cities

A study of transformation and processes involved in the origins and functioning of the earliest states and urban societies. Comparisons are made between early civilizations in Egypt, Mesopotamia, Pakistan and India, China, Mesoamerica, and South America. The intention is partly toward an appreciation of these cultures for their own sakes, but mainly toward causal understandings and general principles which may be of wider relevance. Social, political, economic, ideological, technological and ecological factors are emphasized.

Prerequisite: Permission of the instructor.

Mr. Cowgill

ANTHROPOLOGY 128bR. Origins of African Cultures

African prehistory from the earliest cultures of the Lower Pleistocene to the beginnings of historic states.

Mr. Cowgill

ANTHROPOLOGY 133a. Modern Africa

An examination of the indigenous organization of representative African societies in their ecological and historical settings.

Mrs. Irvine

***ANTHROPOLOGY 135b. Peoples and Cultures of India**

An examination of institutions of representative Indian peoples and their relationship to the wider Indian society.

* Not to be given in 1972-73.

ANTHROPOLOGY 140aR. Prehistory of North American Indians

The prehistory of American societies from the Late Pleistocene to the European Conquest. *Mr. Morris*

ANTHROPOLOGY 141b. The American Indian

A survey of the peoples and cultures of aboriginal North America.

Mr. Manners

***ANTHROPOLOGY 143b. Modern Culture of Middle America**

Contemporary Indian and Ladino societies.

ANTHROPOLOGY 144aR. The Cultures of Native South America

The course will consist of an intensive reading of the important published sources on the peoples of Central Brazil and the Tropical Forest. The goal will be to reanalyze and compare a limited number of societies within the context of a "controlled comparison."

Miss Bamberger and Mr. Saler

***ANTHROPOLOGY 144b. Folk and Peasant Cultures of South America**

The course will concentrate on rural communities of peasants, farmers, and rural wage earners in modern South America. Communities will be analyzed from the point of view of internal organization and relations to the nations of which they are a part.

***ANTHROPOLOGY 145b. The Development of Andean Civilization**

A developmental perspective on the Andean peoples from the initial occupation of the area to the present. Special emphasis will be placed on the Inca, and the fate of native traditions in the modern setting will be briefly examined.

ANTHROPOLOGY 150a and b. Film and Tape in Field Research

A seminar and practicum on the use and potential of audio-visual devices in field work. *Mr. Asch*

ANTHROPOLOGY 151a. Social Organization

Theories of social organization, the interrelations of social institutions, current anthropological methods of interpretation and analysis. *Mrs. Robinson*

ANTHROPOLOGY 151b. Social Organization

A continuation of 151a. This course will emphasize structural analysis. Designed primarily for advanced undergraduate and graduate students. *Mr. Saler*

ANTHROPOLOGY 152b. Economic Anthropology

Economic institutions of non-industrial societies.

Miss Codere

ANTHROPOLOGY 153a. Primitive Art

An anthropological approach to the graphic and plastic art of Africa, Oceania and North America. *Miss Codere*

ANTHROPOLOGY 154a. Primitive Religion

An exploration of belief and behavior in societies of non-literate peoples with reference to theories concerning the origins and functions of religion. *Mr. Saler*

* Not to be given in 1972-73.

ANTHROPOLOGY 155bR. Culture and Personality

An examination of the relationships between sociocultural systems and individual psychological processes with a critical evaluation of selected theories and studies bearing on this problem. *Mr. Saler*

ANTHROPOLOGY 156bR. Political Anthropology

Analysis of conflict, politics and government in tribal and peasant societies.

Mr. Weingrod

***ANTHROPOLOGY 157b. Seminar on Urban Anthropology**

Reading and research on selected problems in urban anthropology. This course will include field work in Greater Boston.

Prerequisite: Anthropology 158a or permission of instructor.

ANTHROPOLOGY 158aR. Urban Anthropology

Selected problems in the description and analysis of urban social organization.

Mr. Jacobson

ANTHROPOLOGY 159a. Anthropology and Modern Life

The relevance of anthropological methods, theory and findings to an understanding of some contemporary social issues.

Mr. Manners

ANTHROPOLOGY 160b. An Anthropological Perspective on the Third World

Seminar on the origins of modern imperialism and colonialism and their impact on the cultures and societies of selected areas of the underdeveloped world.

Prerequisite: Permission of the instructor.

Mr. Manners

ANTHROPOLOGY 161b. Culture and Cognition

An exploration of formal techniques utilized by anthropologists in the attempt to discover and analyze systems of meaning and categorization.

Mrs. Irvine

ANTHROPOLOGY 170aR. Comparative Agrarian Societies

Representative agrarian cultures will be dealt with in detail, with particular emphasis on the interrelationship among the city, the rural community and the state.

Messrs. Kaplan and Weingrod

ANTHROPOLOGY 171a. The Comparative Method

A survey of the comparative method in anthropology. Special emphasis will be given to selected problems, e.g., units of analysis, data quality control, measuring covariation, validity of premises in concept systems.

Mr. Hunt

ANTHROPOLOGY 172b. Social Development in Israel

An analysis of recent social and political trends in Israeli society. Particular attention will be given to processes of social mobility, ethnic integration, and elite formation.

Mr. Weingrod

ANTHROPOLOGY 175a. Pro-Seminar in Anthropological Theory: I

Analysis of representative classics in anthropology.

Miss Codere

ANTHROPOLOGY 175b. Pro-Seminar in Method in Cultural Anthropology: II

The development of anthropological theory, major present-day trends and their relation to problems of research. *Mr. Kaplan*

ANTHROPOLOGY 177b. Proseminar in Archaeological Method and Theory

An examination of important techniques, and theoretical and methodological issues in contemporary archaeology.

Prerequisite: Permission of the instructor. *Mr. Cowgill*

ANTHROPOLOGY 180b. Historical Anthropology

Anthropology and history in anthropological thinking, problems, methods and writings on cultural and social change. Readings on historiography and historical analysis and method, and of model historical studies in prosopography and intellectual and social history. Consideration of selected anthropological-historical studies.

Miss Codere

Primarily for Graduate Students

ANTHROPOLOGY 202bR. Modernization

An exploration of selected problems and processes of modernization, with reference to both the "developed" and the "underdeveloped" states and the relationship between them.

Prerequisite: Consent of the instructor. *Mr. Weingrod*

ANTHROPOLOGY 208a and b. Method and Theory in Ethnographic Film

See Theater Arts 252a and b for description. *Mr. Asch*

ANTHROPOLOGY 210aR. Seminar on Conflict Resolution in Peasant and Pastoral Societies

An exploration of conditions and mechanisms involved in the generation and attempted resolution of social conflicts in selected peasant and pastoral societies. Use will be made of Mrs. Robinson's field data.

Mrs. Robinson

***ANTHROPOLOGY 210b. Special Topics in Anthropological Analysis**

This course will be taught by a different instructor each year and will deal with selected problems in anthropology.

ANTHROPOLOGY 212a. Behavioral Anthropology I

A seminar designed to combine materials from anthropology, human behavioral studies and primate behavior in an attempt to clarify selected aspects of human behavior.

Mr. Horr

ANTHROPOLOGY 212b. Behavioral Anthropology II

A continuation of Anthropology 212a.

Mr. Horr

ANTHROPOLOGY 226a and b. Readings in Research in Archaeology

Mr. Cowgill

ANTHROPOLOGY 227a and b. Readings in Research in Linguistics

To be announced



ANTHROPOLOGY 228a and b. Advanced Readings in Method and Theory
Messrs. Kaplan and Manners

ANTHROPOLOGY 229a and b. Guided Comparative and Historical
 Research
Miss Codere and Mr. Hunt

ANTHROPOLOGY 230a and b. Readings and Research on Culture of
 Hunters and Gatherers
Miss Bamberger

ANTHROPOLOGY 231a and b. Readings in Cognitive Culture
Mr. Saler

ANTHROPOLOGY 235a and b. Readings and Research in Latin American
 Cultures
Mr. Hunt

ANTHROPOLOGY 236a and b. Readings and Research on East and
 South Asia
Mrs. Robinson

ANTHROPOLOGY 237a and b. Readings and Research in African Cultures
Mr. Jacobson

ANTHROPOLOGY 238a and b. Readings and Research in Urban
 Anthropology
Mr. Jacobson

ANTHROPOLOGY 239a and b. Readings and Research in North American
 Indian Cultures
Mr. Manners

ANTHROPOLOGY 240a and b. Readings and Research in Cultures of the
 Mediterranean
Mr. Weingrod

ANTHROPOLOGY 245a and b. Readings and Research in Physical
 Anthropology
Mr. Horr

ANTHROPOLOGY 300a and b. Seminar in Anthropological Field Work
 Consideration of selected field studies. *Required of all graduate students.*
Staff

ANTHROPOLOGY 302. Summer Research Training

Field work for three months during the summer under the supervision of a
 member of the staff.
Staff

ANTHROPOLOGY 303b. Seminar in Inter-cultural Tensions

This course will consider some of the individual, social and socio-psychological consequences of cultural change associated with increasing contact among ethnic, tribal, occupational and class groups in contemporary cultures.

Open to graduate students from other departments with permission of instructor. *Mr. Hunt*

ANTHROPOLOGY 304. Research in Archaeological Field Methods

Mr. Morris

ANTHROPOLOGY 305. Anthropological Colloquium

Staff

ANTHROPOLOGY 350a and b. Anthropological review

Staff

ANTHROPOLOGY 400-410. Dissertation Research

Independent research for the Ph.D. degree.

400. *Miss Codere*

406. *Mr. Manners*

401. *Mr. Cowgill*

407. *Mr. Kaplan*

402. *Mr. Jacobson*

408. *Mrs. Robinson*

403. *Mr. Hunt*

409. *Mr. Saler*

404. *Mr. Horr*

410. *Mr. Weingrod*

405. *Miss Bamberger*

Biochemistry

Objectives

The graduate program in biochemistry leading to the degree of Doctor of Philosophy is designed to equip the student with a broad understanding of the chemistry involved in biological processes and to train him to carry out independent original research. Although the student will be primarily responsible for a comprehensive understanding of biochemical phenomena, he will be encouraged to acquaint himself with the disciplines of biology and chemistry. Research and experimental projects rather than formal course training will be emphasized. The student will, however, be required to take courses in advanced biochemistry, organic chemistry, physical biochemistry, biochemical techniques, molecular biology and biochemistry seminars. The choice of advanced biochemistry courses and those of other scientific disciplines (i.e., organic chemistry, genetics, embryology, etc.) are subject to the student's particular interests. The choice of research programs should be in areas under investigation by the faculty; some of these fields include metabolic regulation in normal and also tumor tissues, enzymology, immunochemistry, radiobiology, biochemical genetics, bacterial and phage genetics, physical chemistry of macromolecules, protein chemistry, plant and virus metabolism, problems in growth and differentiation, photobiology, microbial metabolism, and organic biochemistry.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this area of study. Applicants for admission to the Biochemistry Department are also required to take the Graduate Record Examination. It is strongly suggested that the applicant take one of the advanced sections (preferably chemistry or biology) of this examination. The student's undergraduate curriculum should include some fundamental courses in biology and chemistry which will be subject to final staff approval.

Faculty

Professor LAWRENCE LEVINE, *Chairman*: Immunochemistry. Effect of antigenic conformation on the antigen-anti-body reaction.

Professor ROBERT H. ABELES: Mechanism of enzyme action, with particular reference to the mechanism of action of reactions involving derivatives of Vitamin B-12 and the mechanism of isomerizations.

Professor GERALD D. FASMAN: Conformation of biological macromolecules. Protein models, synthesis, conformational studies and biological properties of polyamino acids. Polyribonucleic acids conformational studies.

Professor LAWRENCE GROSSMAN: Enzymatic repair of damaged deoxyribonucleic acid at the biochemical, macromolecular, and biological levels. Enzymes involved in the modification and synthesis of nucleic acids in prokaryotic and eukaryotic systems.

Professor WILLIAM P. JENCKS: Mechanisms of reactions catalyzed by enzymes, coenzymes, and by chemical catalysts. Effects of salt and denaturing agents on proteins. Mechanisms, catalysis and equilibria of reactions of "energy-rich" compounds of importance in biochemistry and chemistry.

Professor JOHN M. LOWENSTEIN: Metabolic regulation of carbohydrate utilization and fat synthesis. The interaction of metabolic pathways. Regulation and function of the purine nucleotide cycle; regulation of adenosine production in heart.

Professor SERGE N. TIMASHEFF: Physical chemistry of proteins, in particular, structure in solution and interactions of proteins. Effects of amino acid substitution in genetic variants; macro-molecular properties of biological polymers.

Associate Professor DAVID M. FREIFELDER: Structure and function of DNA. Bacterial and phage genetics. Structure of bacterial episomes.

Associate Professor THOMAS C. HOLLOCHER, JR.: Role and mechanism of action of oxidation-reduction enzymes and the paramagnetic properties of enzymes. Mechanism of denitrification. Biochemical aspects of environmental problems.

Associate Professor SUSAN LOWEY: Structure and function of myofibrillar proteins and their relation to the muscle cell. Techniques will include physical chemistry, protein chemistry, fluorescence and electron microscopy.

Adjunct Associate Professor JULIAN KANFER: Lipid chemistry.

Adjunct Associate Professor FARAHE MALOOF: Biochemical pharmacology. Biochemistry of the thyroid. Effects of I^{131} irradiation on thyroid tissue.

Associate Professor WILLIAM T. MURAKAMI: Biochemistry of virus infection. Metabolism of virus-infected cells. Purification and characterization of animal viruses.

Associate Professor MORRIS SOODAK: Aspects of the metabolism of the thyroid gland. Mechanism of iodination and the mode of action of the goitrogenic drugs are being investigated in cell-free preparations of thyroid tissues.

Associate Professor HELEN VAN VUNAKIS: Interaction of hallucinogenic, narcotic and carcinogenic compounds with specific antibodies and natural receptors. Protein structure. Photodynamic action of dyes on nucleic acids.

Adjunct Assistant Professor DWIGHT ROBINSON: Protein denaturation. The mechanisms of reactions of acyl compounds.

Assistant Professor ROBERT F. SCHLEIF: Molecular biology. Mechanism of regulation in bacteria and their viruses.

Adjunct professors are not in residence on campus. They take part in the teaching of courses but are not normally available for thesis research.

Degree Requirements

Doctor of Philosophy

Program of Study. Each doctoral candidate must satisfactorily complete the following fundamental courses: advanced biochemistry, biochemical techniques, physical biochemistry and biochemical research problems, and four of the biochemistry seminars.

Language Requirement. A reading knowledge of German is required. This language requirement must be completed satisfactorily prior to the oral qualifying examination.

Qualifying Examinations. An oral qualifying examination must be taken generally at the beginning of the second year. In this examination, the student will be asked to defend or refute two propositions. One proposition will be assigned in an area of research outside the student's immediate area of specialization and one will be an original proposition put forth by the student for a research problem in his area of interest (this is not necessarily a problem upon which he will carry out research).

In addition, the student will have an opportunity to demonstrate his general knowledge of biochemistry in a series of three area examinations: Physical Biochemistry and Macromolecules, Metabolism and Enzymology, and Molecular Biology. The first area examination will be held at approximately the same time as the proposition defense, and the second area examination at approximately the same time as the research report (see below). The third area can be defended at the same time as one of the first two or at a later time. This general knowledge outside his own field of specialization must be demonstrated to the satisfaction of an advisory committee of four department faculty members.

Admission to Candidacy. At some time before the second semester of their third year, students will present to a committee of four members of the department a summary of their research accomplished to date, including the most significant experimental data, and detailed plans for the completion of a research project. The committee will recommend whether the research project should be continued as a partial fulfillment of the requirements for the Master's or Doctor of Philosophy degree. After completion of the research report and the three area examinations at a level satisfactory for the Ph.D. degree, the student will be admitted to candidacy.

Dissertation and Defense. A dissertation will be required which summarizes the results of an original investigation of an approved subject and which demonstrates the competence of the candidate in independent research.

Courses of Instruction

BIOCHEMISTRY 100a. Introductory Biochemistry

Chemistry, reactions and metabolism of biologically important compounds. Formation and utilization of "energy-rich" compounds. Introduction to enzyme mechanisms. An attempt will be made to interrelate and compare basic biochemical and chemical processes.

Prerequisite: Chemistry 25a and b.

Mr. Lowenstein and Staff

BIOCHEMISTRY 101. Advanced Biochemistry

A discussion of enzyme reactions including energetics, kinetics, and reaction mechanism. Metabolism of carbohydrates, lipids, amino acids, nucleic acids, vitamins and coenzymes, hormones and inorganic substances. Coupled enzyme reactions, such as oxidative phosphorylation, and the synthesis of macromolecules such as glycogen, protein and the nucleic acids.

Prerequisites: Chemistry 25a and b, Biochemistry 100a or their equivalent. Some background in elementary physical chemistry is recommended but not required.

Mr. Abeles and Staff

BIOCHEMISTRY 103a. Molecular Biology

The general principles of molecular biology will be emphasized with respect to nucleic acid biosynthesis, structure, and physiological involvement. In addition, a description of events dealing with control of genetic information will be outlined.

*Messrs. Grossman, Schleif,
Murakami and Freifelder*

BIOCHEMISTRY 104b. Introduction to Physical Biochemistry

Discussion of physical methods: molecular weight measurements, polyelectrolyte properties, structural and conformational analyses of various spectroscopic and X-ray techniques, macromolecular interactions, magnetic methods.

*Mr. Timasheff, Miss Lowey and
Mr. Fasman*

First year Biochemistry graduate students will take 101, 103a and 104b concurrently.

BIOCHEMISTRY 200. Biochemistry Techniques

Students registered for this course will participate for a period of approximately six weeks in several research programs being conducted by the staff members.

Prerequisite: Biochemistry 100a (may be taken concurrently) and consent of the department.

Mr. Schleif

***BIOCHEMISTRY 201b. Macromolecular Structure**

Structural principles encountered in the assembly of biological macromolecules: e.g., three dimensional structure of enzymes, nucleoproteins, viruses, membranes, etc. Evaluation of techniques for conformational analysis.

BIOCHEMISTRY 202b. Chemistry of Enzyme-Catalyzed Reactions

A discussion of the chemistry of certain enzyme-catalyzed reactions compared to the corresponding uncatalyzed or chemically catalyzed reactions. Some consideration of the mechanisms through which enzymes may exert their catalytic effects.

Prerequisites: Chemistry 131 and biochemistry 101, or equivalent, taken previously or concurrently.

Mr. Jencks

***BIOCHEMISTRY 205a. Advanced Molecular Biology**

Topics to be determined.

***BIOCHEMISTRY 207b. Immunochemistry**

An introduction to the basic concepts of immunobiology and immunochemistry. Mode and mechanism of antibody synthesis and of antigen-antibody interaction; application of immunochemical methods to the estimation and characterization of proteins, polysaccharides, enzymes and hormones. The laboratory work will give experience in basic immunochemical techniques in the form of individual research problems.

Prerequisite: Consent of the instructors.

Two lectures and one afternoon laboratory a week.

BIOCHEMISTRY 208b. Metabolic Regulation

Regulation of rates of enzyme reactions, regulation of enzyme levels, rate of determining steps in metabolic pathways, control phenomena such as the Pasteur effect and the regulation of fat synthesis.

Mr. Lowenstein

BIOCHEMISTRY 210a. Protein Chemistry

The following will be discussed: chemical and physical properties of proteins, peptides, and amino acids; isolation techniques; primary structure determination; techniques to determine conformation of proteins; synthesis of peptides and other current problems.

Prerequisite: Biochemistry 100a and one year of physical chemistry.

Mr. Fasman and Miss Van Vunakis

***BIOCHEMISTRY 212b. Neurochemistry**

The special chemistry and biochemistry of nervous tissue, both central and peripheral, will be discussed. Emphasis will be placed on lipid chemistry as well as on nucleic acid and protein synthesis in the nervous system. Nerve conduction; vision; the effects of neurotropic agents on the enzymatic mechanisms of the brain will be presented.

Prerequisite: Biochemistry 100a (may be taken concurrently).

Seminars

One or two seminars will be given each semester. Each student will present an oral and written report on one aspect of the following topics:

BIOCHEMISTRY 215b. Biochemistry of Diseases

Mr. Kanfer

BIOCHEMISTRY 216b. Molecular Biology

Mr. Schleif

BIOCHEMISTRY 218a. Animal Viruses

Mr. Murakami

***BIOCHEMISTRY 219b. Mechanism of Enzyme Action**

***BIOCHEMISTRY 221b. Metabolic Regulation**

BIOCHEMISTRY 222a. Oxidation-Reduction Systems

Mr. Hollocher

***BIOCHEMISTRY 223a. Structure, Metabolism, and Function of Hormones**

* Not to be given in 1972-73.

*BIOCHEMISTRY 225b. Genetics

*BIOCHEMISTRY 227a. Selected Topics in Protein Chemistry

BIOCHEMISTRY 401–415. Biochemical Research Problems

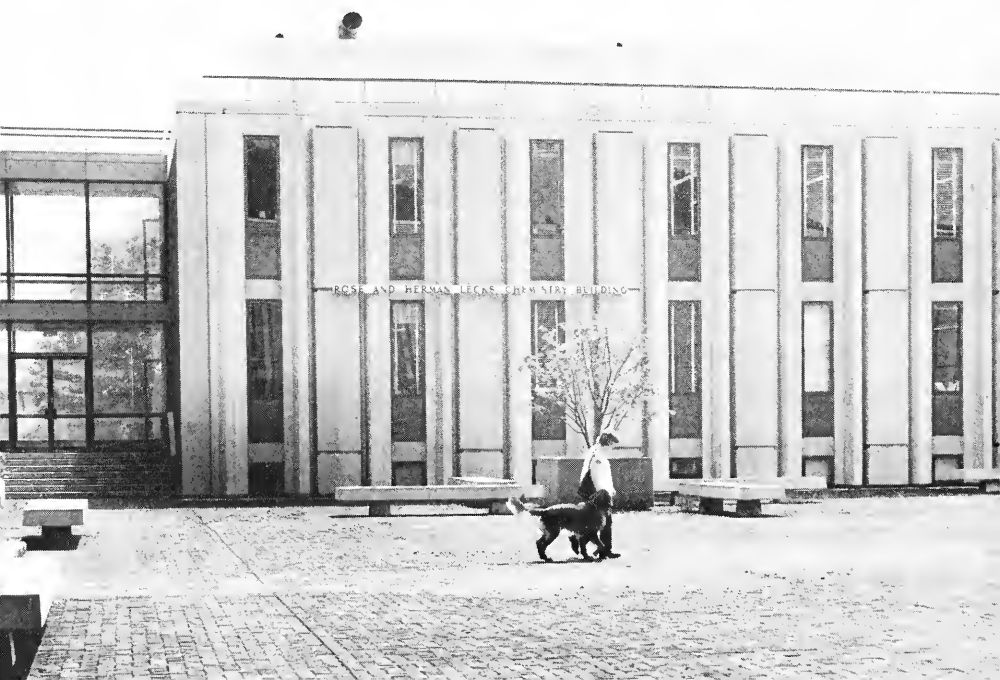
Independent research for the Ph.D. degree.

- | | |
|----------------------------|------------------------------|
| 401. <i>Mr. Jencks</i> | 409. <i>Miss Lowey</i> |
| 402. <i>Mr. Levine</i> | 410. <i>Mr. Soodak</i> |
| 404. <i>Mr. Timasheff</i> | 411. <i>Miss Van Vunakis</i> |
| 405. <i>Mr. Abeles</i> | 412. <i>Mr. Freifelder</i> |
| 406. <i>Mr. Fasman</i> | 413. <i>Mr. Hollocher</i> |
| 407. <i>Mr. Lowenstein</i> | 414. <i>Mr. Murakami</i> |
| 408. <i>Mr. Grossman</i> | 415. <i>Mr. Schleif</i> |

Journal Club, Colloquia, and Research Clubs

In addition to the formal courses announced above, all graduate students are encouraged to participate in the department's Journal Club and colloquia. The Journal Club is an informal meeting of the students, staff and post-doctoral fellows, where recent publications are discussed. Colloquia are general meetings of the department in which both speakers from the department and guest speakers will present their current investigations. Research clubs are organized by various research groups of the department.

* Not to be given in 1972–73.



Biology

Objectives

The graduate program in biology is designed to give the student an understanding of the fundamental nature of living processes, and to train him to undertake original research.

The department rarely admits a graduate student who desires a Master's degree. Such candidates may, however, be admitted at the discretion of the faculty as exceptional cases. A Master of Arts degree may be granted on completion of a designated program to be arrived at after consultation with the graduate adviser.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. The student's undergraduate record should ordinarily include courses equivalent to those required of undergraduates concentrating in biology at this institution. These are: general biology, genetics, cell physiology, developmental biology, and at least two additional elective courses. Students who are deficient in some of these subjects, but whose records are otherwise superior, may make up their deficiencies while they are enrolled as graduate students. In exceptional cases, students may be excused from some of these requirements. Students with serious deficiencies must, however, expect to add additional time to their graduate program in order to satisfy the deficiencies.

It is strongly recommended that applicants take the Graduate Record Examination.

On being admitted to the Biology Department, each graduate student will report to the temporary graduate student adviser who will assist the student with his formal entry into the department and later with his program.

An important part of graduate training consists of laboratory experience. Since the summer months provide an opportunity for such work, unbroken by courses and other responsibilities, it is customary for graduate students to spend their summers doing research. In recognition of this, the Biology Department provides summer stipends for its full-time graduate students.

Faculty

Professor CAROLYN COHEN: Structural aspects of contractile systems, cell division, and blood coagulation.

Professor HERMAN T. EPSTEIN: Radiation biology. Virus genetics.

Professor MARTIN GIBBS: Photosynthesis and plant physiology.

Professor HARLYN O. HALVORSON: Developmental genetics and biochemistry.

Professor ALBERT KELNER: Genetics. Microbial genetics. Radiation biology.

Professor JEROME A. SCHIFF: Plant biochemistry and physiology. Intracellular development. Sulphur metabolism.

Professor MAURICE SUSSMAN: Microbiology. Cellular differentiation. Microbial genetics.

Professor ANDREW G. SZENT-GYORGYI: Chemistry of muscle contraction. General physiology.

Associate Professor CHANDLER M. FULTON: Invertebrate development. Cellular differentiation.

Associate Professor ATTILA O. KLEIN: Plant development and metabolism.

Associate Professor GJERDING OLSEN: Animal physiology. Endocrinology.

Associate Professor RAYMOND E. STEPHENS: Chemistry of cell division. Biological motility.

Degree Requirements

At least one year of teaching experience is required of all degree candidates.

Master of Arts

Program of Study. The program leading to the M.A. degree in biology focuses primarily on the research capability of the student. Specifically, the primary requirement for the degree is the completion of a thesis based on original laboratory work which is acceptable to the department. In general, the preparation for an original research problem will necessitate the enrollment of a student in course work. The specific number and types of courses will vary, depending on the ultimate research problem, and will be prescribed by the department. The candidate must, however, complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of twenty-four semester hours of approved study.

By the end of the first year, each graduate student will choose a specific field of interest and will apply to the chairman of the department for a permanent adviser to be assigned by the department. This adviser will serve as the chairman of a committee of at least three departmental staff members, which will advise the student on courses to be taken and guide him throughout the thesis problem.

The thesis requirement may be waived under exceptional circumstances and only with the approval of the department staff.

Language requirements. All candidates are required to demonstrate a reading knowledge of French or German, or another foreign language acceptable to the department. An examination demonstrating reading ability in the foreign language must be taken prior to the completion of thesis work.

Qualifying Examination. At the discretion of the student's advisory committee, a qualifying or comprehensive examination may be required.

Doctor of Philosophy

Program of Study. All students will be expected to obtain a knowledge of the principles and techniques of the areas of genetics, morphology, physiology and development before taking the qualifying examination. The background a student is expected to have in these areas is equivalent to the course contents of Biology 101b, 200a and b, 202a, 204b, and Biochemistry 100a, 101. Entering students will be encouraged to take Biology 300a and b. The student will be expected also to have additional background in his area of specialization as well as experience in seminar and research courses to be designated.

Each student will choose his specific field of interest and will apply to the chairman of the department for a permanent adviser to be assigned by the department before the end of the second year. The adviser will assist the student in planning a well-balanced program in his specific field of interest. In addition, the adviser will ordinarily serve as the chairman of the student's proposition committee, proposition examining committee and dissertation examining committee.

Language requirement. A reading knowledge of French and German, or another language acceptable to the department, is required. At least one of these requirements must be met before the student completes the first year of graduate study and before he is admitted to candidacy.

Qualifying Examination. Ordinarily this examination will be taken on the recommendation of the student's adviser and should be completed before active dissertation work is initiated. The student's major adviser will appoint two other faculty members to serve as the student's proposition committee. The student will submit seven propositions encompassing the four core areas with no more than two propositions in any one area. Each proposition should be a proposal or hypothesis subject to debate. The proper form in which the propositions are to be submitted will be designated by the department. (See department secretary for suggested format and instructions.) The student will be examined orally on at least three of the seven acceptable propositions by the three members of the propositions committee plus two additional faculty members.

Admission to Candidacy. To be admitted to candidacy, the student must have (a) passed at least one foreign language examination, (b) passed the qualifying examination, (c) shown a capacity for independent research, (d) been accepted by a graduate adviser.

Dissertation and Defense. Each student will conduct an original investigation. *It is strongly recommended that the dissertation research be deferred until the student has fulfilled requirements for admission to candidacy.* With the approval of the student's adviser, however, research courses may be elected at any time. After admission to candidacy, a dissertation committee will be appointed by the chairman of the department. It will consist of at least three staff members headed by the student's permanent adviser. This committee must approve the candidate's subject of research, will guide his research activities toward the doctoral dissertation and, in addition, will read and evaluate the completed dissertation. After submission of the dissertation, the candidate will be expected to present the principal results of his work and its significance during an examination in defense of the dissertation.

Courses of Instruction

BIOLOGY 101b. Comparative Physiology of Animals

An intensive comparison will be presented of the mechanisms which diverse organisms have evolved to deal successfully with similar environmental challenges. Similarities and dissimilarities in the processes operating to regulate metabolism, reproduction, sensitivity and reactivity in animals will be studied.

Prerequisite: Biology 31b and 41a or the equivalent.

Three classroom and three laboratory hours a week.

Laboratory fee: \$15.

Mr. Olsen

BIOLOGY 102b. Structural Biology

Physical principles of biomolecular organization. Image formation: microscopy and x-ray diffraction. Studies of the design and function of muscle, virus particles, membranes and other cellular structures.

Some background in physics and chemistry is desirable.

Miss Cohen and Mr. Caspar

BIOLOGY 103a. Seminar in Cell Structure and Function

Molecular architecture of the living cell and its relationship to life processes. The generalized cell, the cell in division, and the specialized cell will be considered from the viewpoint of classical cytology and also in terms of current biomedical, optical, and electron-optical studies.

Prerequisites: Biology 30a, 40a.

Mr. Stephens

BIOLOGY 104b. Cell in Development and Heredity

A selected topic in cell biology will provide the focus for discussions of contemporary problems. Most of the extensive reading will be original research papers, and students will be expected to participate actively in the classroom.

Prerequisite: Biology 40a or permission of the instructor.

Mr. Fulton

BIOLOGY 108a. Vertebrate Endocrinology**BIOLOGY 140b. DNA Repair: Its Genetic and Evolutionary Aspects****BIOLOGY 200b. The Cellular Basis of Development**

Phenomic variation and interaction at the cellular level will be considered. Developmental events in microbial cultures, morphogenetically complex Protista, Metazoa and Metaphyta will be analyzed in terms of the cellular mechanisms involved.

Three classroom hours.

Mr. Sussman

BIOLOGY 202a. Gene Structure and Function*BIOLOGY 245a. Selected Topics in Plant Metabolism**

A discussion of those areas of physiology and biochemistry to which plants lend themselves as experimental objects. Conspicuous examples are photosynthesis, photomorphogenesis, nitrogen fixation, and the biosynthesis of natural products such as anthocyanins, flavonoids, isoprenoids, phenols, terpenes, etc.

Three classroom hours a week.

Mr. Gibbs

BIOLOGY 245b. Comparative Physiology and Biochemistry of Plants

(See 245a)

Three classroom hours a week.

Mr. Schiff

Courses in Research**BIOLOGY 300a and b. Biological Research**

Primarily for the first year student with the purposes of introducing him to biological research and to the work in progress in the laboratories of a number of faculty members. In consultation with the graduate adviser, the student plans a sequence of such tenures, each comprising six weeks or more, and then carries out experimental investigations under the guidance of the faculty members involved.

Staff

BIOLOGY 400. Biophysics of Microorganisms

Laboratory hours to be arranged.

Laboratory fee: \$25.

Mr. Epstein

BIOLOGY 401. Genetics and Microbiology

Laboratory hours to be arranged.

Laboratory fee: \$25.

Mr. Kelner

BIOLOGY 402. Population Genetics and Mathematical Genetics

Laboratory hours to be arranged.

Laboratory fee: \$25.

Mr. Halvorson

BIOLOGY 403. Microbial Genetics

Laboratory hours to be arranged.

Laboratory fee: \$25.

Staff

* Not to be given in 1972-73.

BIOLOGY 404. Vertebrate Physiology

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Olsen***BIOLOGY 405. Invertebrate Development**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Fulton***BIOLOGY 406. Plant Physiology**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Schiff***BIOLOGY 407. Structural Aspects of Contractile Systems, Cell Division and Blood Coagulation**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Miss Cohen***BIOLOGY 408. Differentiation and Genetics**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Sussman****BIOLOGY 409. Vertebrate Development****BIOLOGY 410. Plant Development**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Klein***BIOLOGY 411. Cytology**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Stephens***BIOLOGY 412. Plant Metabolism**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Gibbs***BIOLOGY 413. General Physiology**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Szent-Gyorgyi***Biology Journal Clubs**

There will be a number of informal Journal Clubs which will deal with various topics of concern to the various specialties. These will meet regularly under the auspices of staff members. Students, depending upon their individual needs, may be required to attend.

* Not to be given in 1972-73.

Biophysics

Objectives

The interdepartmental graduate program in biophysics, leading to the degree of Doctor of Philosophy, is designed to give the student a broad understanding of the physico-chemical nature of living processes and to train him to carry out independent research. In addition to basic courses in cellular biology, the student will be expected to obtain a broad background in the supporting disciplines of biochemistry, biology, chemistry, physics, and mathematics. After completion of this program, the student's remaining course work will be in an area of biophysics in which a faculty member is doing research. Some areas in which research is now being actively pursued are photobiology, radiobiology, virus reproduction and muscle contraction.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to applicants for admission to this area of study. Applicants are also required to take the Graduate Record Examination. The student's undergraduate program should, ideally, include organic and physical chemistry, atomic and nuclear physics, differential equations, and courses in cellular biology. Inasmuch as most students will be deficient in some respects, it is expected that deficiencies may be made up by taking the appropriate courses while in Graduate School. If a petition is approved, the successful completion of some of these courses may be credited as part of the graduate program. On being admitted to study in biophysics, the student will be assigned to a member of the Biophysics Committee, who will advise the student on a program of courses. This program should be submitted for approval to the committee by the beginning of the second term of residence.



Faculty

Professor HENRY LINSCHITZ (Chemistry), *Chairman*; Professors EUGENE P. GROSS (Physics), ANDREW G. SZENT-GYORGI (Biology), SERGE N. TIMASHEFF (Biochemistry); Associate Professor THOMAS C. HOLLOCHER (Biochemistry).

Degree Requirements

Doctor of Philosophy

Program of Study. The following are five areas in which competency at more than a minimal level is expected of a candidate for a Ph.D. in Biophysics:

1. Biology through cell structure and function, genetics, development, and molecular biology.
2. Classical physics and modern physics through the basic ideas of quantum mechanics. Computer programming.
3. Organic chemistry and physical chemistry including thermodynamics.
4. Biochemistry including enzyme mechanisms.
5. Mathematics through elementary differential equations.

Language Requirements. A reading knowledge of German and French is required. Russian may be substituted for one of these languages if the advisory committee determines that it is useful for a student in his particular field of research.

Qualifying Examination. A student should have completed the program of study not later than the end of his second year in residence so that he may be able to take a qualifying examination covering this material.

Dissertation and Defense. Upon passing this examination, the student will select a dissertation supervisor and formally initiate research and course study in the research area of his supervisor. Additional credits may be taken from among graduate courses and seminars, as approved by the student's research supervisor and advisory committee. This committee will be appointed by the dissertation supervisor, subject to the approval of the Biophysics Committee. When the student and the dissertation supervisor have agreed on the research project, a brief description of the project must be filed with each of the members of the advisory committee.

After completing the research and the dissertation, the candidate will present and discuss the results and significance of his work during an examination in defense of his dissertation.

Courses of Instruction

BIOPHYSICS 300a and b. Biophysical Techniques

All entering students normally register for this course and will thereby participate for periods of about ten weeks in the research programs of each of five or six staff members selected from the departments of Biochemistry, Biology, Chemistry and Physics. *Staff*

Chemistry

Objectives

The graduate program in chemistry, comprising course work, seminar participation, and research, is designed to lead to a broad understanding of the subject. The graduate program leads to the M.A. and Ph.D. degrees in chemistry. The Ph.D. is offered with specializations in inorganic, organic, physical and physical-organic chemistry and in chemical-physics. (Detailed information on the interdisciplinary specialization in chemical physics is found on page 78.) All students will be required to demonstrate knowledge in advanced areas of inorganic, organic and physical chemistry. The doctoral program is designed to be flexible so that individual programs of study may be devised to satisfy the particular interests and needs of each student. In each case this program will be decided by joint consultation between the student and the Departmental Committee of Graduate Studies and the thesis supervisor when selected. The doctoral program will normally include a basic set of courses in the student's own area of interest, this to be supplemented by advanced courses in chemistry and, where appropriate, in biochemistry, biology, mathematics and physics.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. In addition, the undergraduate curriculum of applicants should include courses in physics and mathematics (differential and integral calculus), and courses in general and inorganic, analytical, organic and physical chemistry.

Admission to advanced courses will be based upon results of a qualifying examination in each of these areas of chemistry, which will be taken upon entrance. These examinations will determine whether the student will be required to make up deficiencies in preparation. The results of the qualifying examinations will be considered in the assignment of awards for the subsequent years of graduate study.

Faculty

Professor PAUL B. DORAIN, *Chairman*: Electron paramagnetic resonance; exchange interactions and optical spectra of crystalline materials.

Professor SAUL G. COHEN: Chemistry of free radicals; organic photochemistry; specificity and mechanism of reactions of enzymes.

Professor SIDNEY GOLDEN: Quantum statistical theory of chemical kinetics; many body problems and atomic and molecular structure; statistical mechanics of ion solvation.

Professor ERNEST GRUNWALD: Solution chemistry; kinetics of proton transfer reactions; lifetimes of hydrogen-bonded complexes in solution; electric dipole moments of ion pairs.

Professor JAMES B. HENDRICKSON: Synthesis of natural products; stereochemistry and molecular geometry; development of new synthetic reactions.

Professor HENRY LINSCHITZ: Reactions of excited molecules; stabilization of free radicals; photo-ionization in solution and properties of solvated electrons; metal complexes; physical mechanisms of photobiological processes.

***Professor MYRON ROSENBLUM: Reaction mechanisms; molecular rearrangements; organometallic chemistry of the transition elements.

**Professor ROBERT STEVENSON: Isolation and structure of natural products; lignan synthesis; molecular rearrangements in triterpenoids and steroids.

Associate Professor MICHAEL HENCHMAN: Gas kinetics under "single collision" conditions; dynamics of molecular collision processes.

Associate Professor PETER C. JORDAN: Statistical mechanical theory of fluids; non-equilibrium statistical mechanics and thermodynamics; quantum chemistry.

Associate Professor KENNETH KUSTIN: Study of fast reactions in solution by relaxation techniques; mechanisms of inorganic reactions; bioinorganic chemistry.

Associate Professor COLIN STEEL: Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions.

Associate Professor THOMAS R. TUTTLE, JR.: Electron distribution in ion radicals by electron spin-resonance; molecular motions in solutions; properties of metal solutions in ammonia and other solvents.

Adjunct Associate Professor E. HAYON: Radiation chemistry and photochemistry.

** On leave, Fall Term, 1972-73.

*** On leave, Spring Term, 1972-73.

Assistant Professor IU-YAM CHAN: Phosphorescent triplet state of organic molecules; biological polymers; inorganic paramagnetic centers in crystals.

Assistant Professor IRVING R. EPSTEIN: Use of quantum mechanics to elucidate molecular properties; chemistry of electron-deficient compounds; theoretical approaches to Compton scattering, X-ray diffraction, and photochemistry.

Assistant Professor BRUCE M. FOXMAN: X-ray structure determination; stereochemistry and molecular geometry in strained metal complexes; kinetics and mechanisms of solid-state reactions.

Assistant Professor PHILIP M. KEEHN: Structurally interesting molecules; photo-oxidation and photochemistry; new methods in organic synthesis.

Assistant Professor RONALD J. PARRY: Biosynthesis of natural products; stereochemical aspects of enzyme mechanisms.

Degree Requirements

Detailed information on the interdisciplinary specialization in chemical physics is found on page 78.

Entering students may be admitted to either the Master's or the Doctoral program.

All candidates for advanced degrees are required to meet the following requirements:

Qualifying Examination. These examinations are set twice a year, in September and February, and are based on the undergraduate Chemistry curriculum. Students are required to take qualifying examinations in Organic, Inorganic-Analytical and Physical Chemistry during their first year.

Language Requirements. Each student is obliged to demonstrate a useful reading knowledge of scientific German within the first two years of residence.

Seminar. Each student in residence is required to attend and participate in the seminar in his chosen area of concentration.

Teaching. It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Master of Arts

Program of Study. Each candidate is required to complete successfully one year of study at the graduate level in chemistry, or, with prior permission of the Departmental Graduate Studies Committee, in related fields. The

program will include laboratory work. The detailed program of study will be one jointly arrived at by the candidate and the Graduate Studies Committee to reflect the candidate's area of interest as well as a perspective of other areas.

Residence Requirements. The minimum residence requirement for the M.A. degree is one year.

Doctor of Philosophy

Program of Study. A balanced program of study will be prepared jointly by the student and the Departmental Graduate Studies Committee. This will normally include a basic core of course work in his area of interest and later more specialized courses appropriate to it. It is expected that doctoral students will choose a research adviser during the first year, normally in February. A student who satisfactorily completes his first year of study in the Doctoral program qualifies for the Master's degree.

Admission to Candidacy. A student is recommended for admission to candidacy for the doctoral degree upon certification by his thesis adviser and the Graduate Studies Committee that he has passed the qualifying and language examinations and has made satisfactory progress in his program of study and the final Ph.D. examinations.

Final Examinations. The graduate student must demonstrate his proficiency by taking final examinations in his major field, organic, physical-organic, physical, or inorganic chemistry. In organic chemistry and in physical-organic chemistry, these examinations are administered twice a year and are based on assigned readings. Students must pass three of these examinations and must maintain satisfactory progress toward this end. In physical chemistry and inorganic chemistry, generally during the third semester of graduate work, the student is assigned a set of propositions. In physical chemistry the set consists of three propositions; the student takes a written examination on one proposition and is examined orally on the remaining two. In inorganic chemistry the student is assigned two propositions; he takes a written examination on one proposition, and is examined orally on his proposed research project and the remaining proposition.

Residence Requirements. The minimum residence requirement for the Ph.D. degree is two years.

Dissertation and Defense. A dissertation is required which describes the results of an original investigation and which demonstrates the competence of the candidate in independent investigation, critical ability and effectiveness of expression. An oral defense of the dissertation will be held.

Courses of Instruction

CHEMISTRY 110b. Analytical Chemistry

Principles and techniques involved in modern chemical analysis. Application of modern methods of chemical analysis to problems of theoretical and practical interest.

Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry.

Two lectures and six laboratory hours a week.

Mr. Tuttle

CHEMISTRY 121a. Inorganic Chemistry I, Lectures

Introduction to the principles of chemical binding; valence theory, periodic properties, molecular structures. Application chiefly to the chemistry of the lighter and non-metallic elements.

Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry.

Three lectures a week.

Mr. Foxman

*CHEMISTRY 122b. Inorganic Chemistry II, Lectures

A continuation of Chemistry 121a, dealing with the transition metal, rare earth and actinide elements.

Prerequisite: Chemistry 121a or the equivalent.

*CHEMISTRY 123b. Nuclear Chemistry

Nuclear reactions, radioactive decay, interaction of radiation and matter, chemical applications of isotopic tracers, Mössbauer Spectroscopy, Positronium Chemistry and Cosmochemistry.

Prerequisite: Satisfactory grade in an undergraduate course in organic chemistry.

CHEMISTRY 129a. Inorganic Chemistry Laboratory

Inorganic synthesis and analysis; modern synthetic techniques and instrumental analysis.

Corequisite: Chemistry 121a.

Two afternoons of laboratory a week.

Mr. Foxman

*CHEMISTRY 130a. Advanced Organic Chemistry: Structure

Introduction to group theory and its application to molecular orbital theory and spectroscopy. Application of physical and spectroscopic methods to the elucidation of structure and stereochemistry of organic compounds.

Prerequisite: Satisfactory grade in an undergraduate course in organic chemistry.

CHEMISTRY 131a. Advanced Organic Chemistry: Topics in Structure and Reactivity

Bond properties. Aromaticity. Stereochemistry. Reactive intermediates. Acids and bases. Linear free energy relations.

Prerequisite: Satisfactory grades in undergraduate courses in organic and physical chemistry.

Mr. Cohen

* Not to be given in 1972-73.

***CHEMISTRY 132b. Advanced Organic Chemistry: Spectroscopy**

Application of physical and spectroscopic methods to the elucidation of structure and stereochemistry of organic compounds.

Prerequisite: Satisfactory grade in Chemistry 130a or permission of instructor.

***CHEMISTRY 133b. Advanced Organic Chemistry: Mechanisms**

Kinetics, stereochemistry and mechanisms of selected organic reactions.

Prerequisites: Satisfactory grade in undergraduate courses in organic and physical chemistry.

CHEMISTRY 134b. Advanced Organic Chemistry: Synthesis

Systematic design of organic syntheses, including a survey of reaction for construction and functionalization of organic molecules and criteria for their use in synthesis design. Selected total syntheses from the literature will be examined.

Prerequisite: Satisfactory grade in an undergraduate course in organic chemistry. *Mr. Hendrickson*

CHEMISTRY 141a and b. Advanced Physical Chemistry I

Classical, statistical, irreversible thermodynamics and chemical kinetics. Properties of real systems: gases, phase stability, chemical equilibrium and solutions. Statistical equilibrium, ensembles and fluctuations. Entropy production, reciprocal relations, microscopic reversibility and regression of fluctuations. Rate laws and approach to equilibrium; scattering and energy transfer. Gas and solution kinetics. Surface reactions.

Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry. *Mr. Linschitz, 1st sem.*

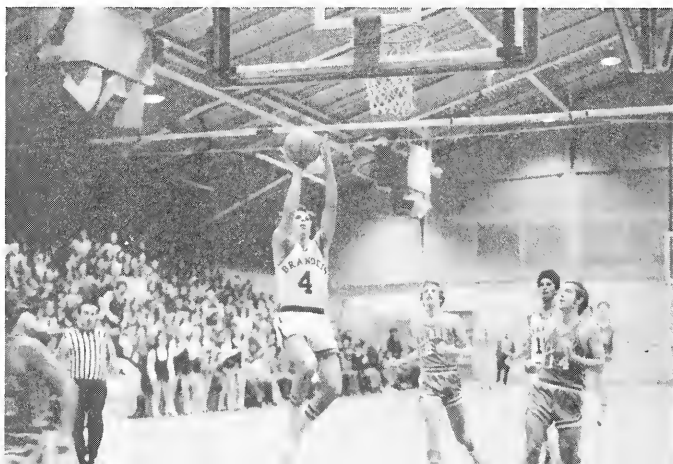
Mr. Henchman, 2nd sem.

CHEMISTRY 142b. Advanced Physical Chemistry II

Quantum mechanics: waves and wave packets, operator methods, Schrodinger's equation, simple model systems, angular momenta, perturbation theory and variational principle.

Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry. *Mr. Epstein*

• Not to be given in 1972-73.



CHEMISTRY 143a. Advanced Physical Chemistry II

A continuation of Chemistry 142b. Quantum Chemistry: spin, atomic and molecular structure, spectroscopy, chemical binding, advanced topics.

Prerequisite: Satisfactory grade in Chemistry 142b or the equivalent.

Mr. Jordan

CHEMISTRY 144a. Structure and Spectroscopy

Interaction of radiation with matter and its relevance to molecular structure. Topics will be selected from: X-ray and electron diffraction; microwave, nmr, infra-red, visible and ultraviolet absorption; molecular beam and mass spectrometry.

Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry.

Mr. Chan

BIOCHEMISTRY 100a. Introductory Biochemistry

See Biochemistry 100a for description.

Mr. Lowenstein and Staff

CHEMISTRY 200. Advanced Chemistry Laboratory

Staff

CHEMISTRY 220c. Inorganic Chemistry Seminar

A seminar course. Required of graduate students in inorganic chemistry who must audit this course each year.

Mr. Kustin

***CHEMISTRY 221a. Advanced Inorganic Chemistry I**

Inorganic reaction mechanisms: Substitution, exchange, polymerization, redox, hydrolytic and solvolytic reactions; inorganic stereochemistry.

Prerequisite: Chemistry 141a and b.

***CHEMISTRY 222b. Advanced Inorganic Chemistry II**

Theoretical inorganic chemistry: Atomic structure and the application of group theory to inorganic compounds, particularly the transition metals; ligand field theory.

Prerequisite: Chemistry 142b and 143a.

Chemistry 221 and Chemistry 222 are given in alternate years.

***CHEMISTRY 229b. Special Topics in Inorganic Chemistry**

The content will depend on the interests of the instructor.

CHEMISTRY 230b. Advanced Organic Chemistry: Mechanisms

Kinetics, stereochemistry and mechanisms of organic reactions.

Prerequisite: Satisfactory grade in Chemistry 130a or 131 or 132a.

Mr. Cohen

CHEMISTRY 231c. Organic Chemistry Seminar

Required of graduate students in organic chemistry who must audit this course each year.

Staff

* Not to be given in 1972-73.

***CHEMISTRY 232b. Chemistry of Heterocyclic Compounds**

A systematic survey of the principal oxygen, nitrogen and sulfur heterocycles of five and six membered and fused ring systems, including their synthesis, chemical reactions and aromatic character.

Prerequisite: Satisfactory grade in Chemistry 131 or the equivalent.

CHEMISTRY 234bR. Chemistry of Organometallic Compounds

A survey of the complexes formed by transition metals with olefins, acetylenes and aromatic ligands; their preparation, properties and chemical reactions.

Prerequisite: Chemistry 130a or the equivalent.

Mr. Rosenblum

***CHEMISTRY 235a. Special Topics in Organic Chemistry**

The content will depend on the interests of the instructor.

Prerequisite: Chemistry 130a, or 131, or 132a or consent of the instructor.

***CHEMISTRY 237b. The Chemistry of Natural Products**

Isolation, structure elucidation, degradation and synthesis of selected classes of natural products.

Prerequisite: Chemistry 130a, or 131, or 132a.

CHEMISTRY 240c. Physical-Organic Chemistry Seminar

Required of graduate students in physical-organic chemistry who must audit this course each year.

Mr. Grunwald

CHEMISTRY 241c. Physical Chemistry Seminar

Required of graduate students in physical chemistry who must audit this course each year.

Mr. Steel

CHEMISTRY 243a. Statistical Thermodynamics

Elementary statistical mechanics of systems in equilibrium; Boltzmann, Fermi-Dirac and Bose-Einstein statistics; microcanonical, canonical and grand canonical ensembles; applications to thermodynamic systems.

Mr. Jordan

***CHEMISTRY 244a. Special Topics in Physical Chemistry**

CHEMISTRY 244b. Special Topics in Physical Chemistry: Collision Processes

Chemical kinetics under single-collision conditions; the dynamics of reactive and non-reactive collision processes; collision mechanisms and cross sections; energy disposal; energy and reactivity; high-energy chemistry.

Mr. Henchman

***CHEMISTRY 245a. Physical Organic Chemistry**

A quantitative discussion of rates and equilibria of organic reactions.

***CHEMISTRY 248a. Advanced Quantum Chemistry**

Selected aspects of quantum mechanics of molecular systems.

Prerequisite: Chemistry 142 or the equivalent.

CHEMISTRY 250c. Chemical Physics Seminar

Required of graduate students in chemical physics who must audit this course each year. *Mr. Golden*

CHEMISTRY COLLOQUIUM

Lectures by faculty and invited speakers. Required of all graduate students. *Non-credit.*

Courses in Research**CHEMISTRY 400. Organic Chemistry and Physical Organic Chemistry**

Reaction mechanisms; photochemistry; enzyme reactions; free radicals; radiation chemistry. *Mr. Cohen*

CHEMISTRY 401. Organic Chemistry

Chemistry of natural products; steroids, triterpenoids, lignans. *Mr. Stevenson*

CHEMISTRY 402. Organic Chemistry*CHEMISTRY 403. Organic Chemistry**

Non-benzenoid aromatics; molecular rearrangements; reaction mechanisms; organometallics. *Mr. Rosenblum*

CHEMISTRY 404. Organic Chemistry

Synthesis of natural products; stereochemistry and molecular geometry; development of new synthetic reactions. *Mr. Hendrickson*

CHEMISTRY 405. Physical Chemistry

Chemical kinetics of elementary reactions; statistical theory of atomic and molecular structure; statistical mechanics of electrolytic solutions; physical chemistry of metal-ammonia solutions. *Mr. Golden*

CHEMISTRY 406. Physical Chemistry

Reactions of excited molecules; luminescence; electron solvation; metal complexes; physical mechanisms of photobiological processes. *Mr. Linschitz*

CHEMISTRY 407. Physical and Inorganic Chemistry

Electron paramagnetic resonance; optical spectra; solid state chemistry. *Mr. Dorain*

CHEMISTRY 408. Physical Chemistry

Electron spin resonance; structure of free radicals; diffusion in liquid solutions; chemistry of electrolytic solutions. *Mr. Tuttle*

CHEMISTRY 409. Inorganic Chemistry

Kinetics and mechanisms of inorganic reactions; experimental study of fast reactions by the temperature-jump and other relaxation techniques. *Mr. Kustin*

***CHEMISTRY 410. Physical and Inorganic Chemistry**

* Not to be given in 1972-73.

CHEMISTRY 411. Physical Chemistry

Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions. *Mr. Steel*

CHEMISTRY 412. Physical and Physical Organic Chemistry

Solution chemistry; kinetics of proton transfer reactions; lifetimes of hydrogen-bonded complexes in solution; electric dipole moments of ion pairs. *Mr. Grunwald*

CHEMISTRY 413. Physical Chemistry

Theory of fluids; theory of non-equilibrium processes; quantum chemistry. *Mr. Jordan*

CHEMISTRY 414. Physical Chemistry

Cross-sections, dynamics and lifetimes of ion-neutral collision processes in the gas phase using beam techniques; charge transfer; elastic and inelastic scattering. *Mr. Henchman*

CHEMISTRY 415. Physical Chemistry

Quantum mechanical calculations of molecular properties; molecular momentum distributions; Compton scattering and X-ray diffraction; chemistry of boron hydrides and carboranes; photochemistry. *Mr. Epstein*

CHEMISTRY 416. Physical Chemistry

Application of magnetic resonance and/or optical methods to the investigations of: π -electron systems in molecular crystals, molecules of biochemical interest, ions and co-valent complexes containing paramagnetic centers. *Mr. Chan*

CHEMISTRY 417. Organic Chemistry

Synthesis of cyclophanes and other structurally interesting molecules; new methods and reagents in organic synthesis; photochemistry; photooxidation; reaction mechanisms. *Mr. Keehn*

CHEMISTRY 418. Organic Chemistry

Studies of natural product biosynthesis and of the stereochemistry of enzyme mechanisms; radioactive tracers. *Mr. Parry*

CHEMISTRY 419. Inorganic Chemistry

Chemical and X-ray structural studies of: sterically crowded transition metal complexes; trans-effects in octahedral complexes; solid-state rearrangement reactions of metal complexes. *Mr. Foxman*

Ph.D. in Chemistry with Specialization in Chemical Physics

The graduate program in chemical physics is an interdisciplinary specialization designed to meet the needs of students who wish to prepare themselves for the study of scientific problems using the methods and theories of modern physics and physical chemistry. This objective is attained by (1) formal course work in chemistry, physics and, possibly, mathematics; (2) participation in relevant graduate seminars; (3) a program of supervised research involving chemical physics; (4) independent study.

The program is designed to be flexible in providing individual programs of study to satisfy the particular interests and needs of each student. Final programs of study and research will be jointly arrived at by the student, his research supervisor and the Chemical Physics Committee. Only candidates for the Ph.D. will be accepted.

Admission

The general requirements for admission to the Graduate School apply to candidates for admission to the graduate program in chemical physics. Applicants should have a strong undergraduate background in chemistry, physics and mathematics.

Degree Requirements

All candidates for the Ph.D. degree in Chemistry with specialization in chemical physics must meet the following requirements:

Qualifying Examinations. Each student is expected to demonstrate a satisfactory knowledge of undergraduate chemistry, physics and mathematics by the performance in three qualifying examinations; one each in physical chemistry, organic or inorganic/analytical chemistry and physics/mathematics. These examinations are set two times a year, in September and February. Results of these examinations will be used as an aid in constructing the student's initial program of course work and will be considered by the Chemical Physics Committee in evaluating the student's progress.

Language Requirements. Each student is required to demonstrate a useful reading knowledge of scientific German within the first two years of residence.

Seminar. Each student in residence is required to attend and to participate in the Chemical Physics Seminar. Participation in other seminars in Physics and Chemistry is also recommended.

Teaching. It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Master of Arts

No Master's degree is offered with specialization in chemical physics, but students who satisfy the appropriate requirements will be eligible for the M.A. degree in Chemistry.

Doctor of Philosophy

Program of Study. It is expected that some candidates for the Ph.D. degree in Chemistry with specialization in chemical physics may require a longer period of time in course work than will students in either of the fields of physics or chemistry. In general, the program for the Ph.D. in Chemistry with specialization in chemical physics will include eight semester graduate courses: four in physical chemistry, one in either organic or inorganic chemistry and three in physics. No specific course work in mathematics is required, but students are expected to be familiar with the techniques necessary for the proper pursuit of their research. In addition, each student is expected to demonstrate a knowledge of elementary computer programming.

Students may satisfy their program's course requirements in part or in entirety by passing (or giving evidence of ability to pass) the final examination in the appropriate number of such courses. Courses in areas related to chemistry and physics may also be considered by the Chemical Physics Committee in partial fulfillment of the requirements.

Admission to Candidacy. A student is recommended for admission to candidacy for the doctoral degree upon certification by his thesis adviser and the Chemical Physics Committee that he has passed the qualifying and language examinations and has made satisfactory progress in his program of study and the final Ph.D. examination.

Final Examinations. Final examinations in chemical physics are generally taken during the third semester of graduate work. The student is assigned a set of three propositions; the student takes a written examination on one proposition and is examined orally on the remaining two.

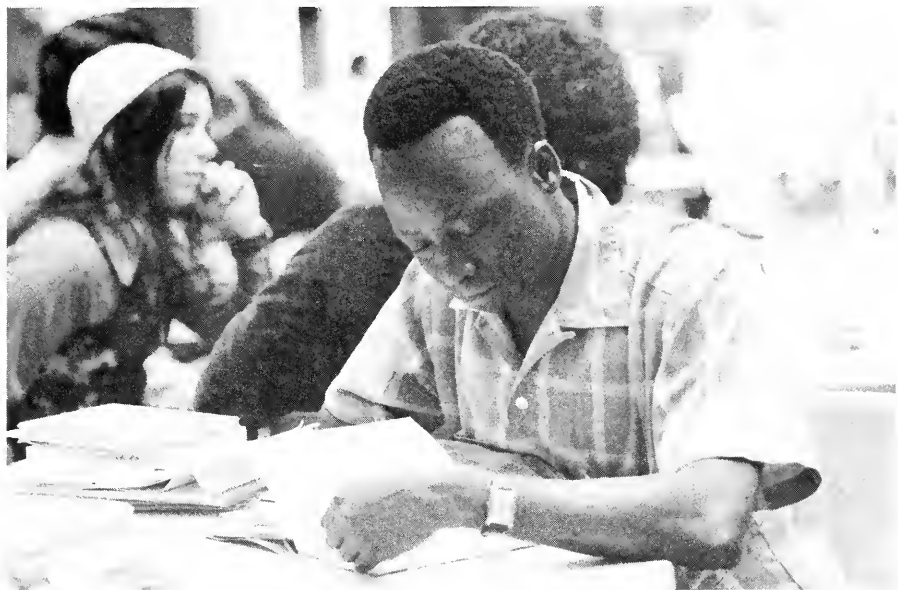
Residence Requirements. The minimum residence requirement for the Ph.D. degree is two years.

Dissertation and Defense. A dissertation is required which describes the results of an original investigation and which demonstrates the competence of the candidate in independent investigation, critical ability and effectiveness of expression. An oral defense of the dissertation will be held.

Comparative History

Objectives

The graduate program in Comparative History, leading to the degree of Doctor of Philosophy in History, has been designed to train professional scholars and teachers of European history. Comparative history is the conceptuali-



zation and study of the past according to political, social, economic, cultural and psychological categories that transcend traditional period and national divisions.

A small select student body will work in close cooperation with the faculty. All teaching will be done in small seminars and tutorials. Individual programs of study will be developed from the beginning of the students' graduate work in comparative history to prepare them for their qualifying examination and to guide them toward their dissertation research.

The program will concentrate on the comparative history of Western Europe, but students will be strongly encouraged to examine the patterns of European history in comparison with those of American civilization, Eastern Europe, Latin America, Africa and the Near and Far East.

Students in the program will be trained in two fields: one a very broad chronological field, the other a topical or category field. The three chronological fields or periods are: (1) medieval Europe 300–1500, (2) early modern 1400–1815, (3) modern Europe 1750–present. Students will elect one of these periods and will be allowed to concentrate on more narrowly defined eras and areas within the chosen field.

The student will choose, under guidance, a category of comparative historical inquiry and will be required to study it throughout the whole of European history and, within practical limits, in other civilizations.

It is expected that the doctorate will be earned within four years from entering the program. The maximum time allowed will be six years.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this program. Only doctoral candidates will be accepted. Students who have had a sound preparation in history and the social sciences and who have demonstrated unusual imagination and critical insight will receive special consideration. Undergraduate majors in the social sciences or in comparative literature may also apply. Applicants should submit a sample of written work, preferably in European history.

Faculty

Professor GEOFFREY BARRACLOUGH: Modern and contemporary history. Political institutions. Historiography.

Professor DAVID S. BERKOWITZ: Early modern history. Bibliography, Humanism, the Reformation, and Political thought.

Professor RUDOLPH BINION: Modern history. Culture and thought. Psychohistory. Political and social thought.

*Professor EUGENE C. BLACK: Modern history. Political and social institutions.

Professor DAVID H. FISCHER: Modern history. Social institutions.

Associate Professor JOHN P. DEMOS: Early modern history. Social institutions.

Associate Professor ANGELIKI LAIOU: Medieval history. The Byzantine Empire. Political and social institutions.

Associate Professor JOHN E. SCHRECKER: Modern Asian history. Nationalism. Imperialism.

Associate Professor MILTON I. VANGER: Modern Latin American history. Political institutions.

Assistant Professor GREGORY FREEZE: Modern history. Eastern Europe. Political and social institutions.

Assistant Professor GERALD N. IZENBERG: Modern history. Culture and thought.

*Assistant Professor GERALD L. SOLIDAY: Early modern history. Social and political institutions.

* On leave, 1972-73.

Degree Requirements

Master of Arts

An M.A. degree in History will be awarded those students who have satisfactorily completed one year of residence at full-time, fulfilled the language requirement and have passed a qualifying examination at the Master's level.

Doctor of Philosophy

Each student will be assigned to a member of the faculty who will be his period supervisor. In addition, he will work independently with other assigned faculty members who will help him define his category field.

Program of Study. During the first two years in the program, students will take four courses each term, divided between seminars, and supervised independent study or reading courses.

The third year in the program will, when feasible, be spent abroad pursuing research for the dissertation. Arrangements will be made for conferences with foreign scholars who can advise on the subject of the research.

Language Requirement. The use of foreign languages is an essential tool for the comparative historian. Each student will be expected to pass at least one language examination during his first month in the program, the second one before registration for the third semester. Language requirements are:

Medieval: French, German, Latin

Early Modern and Modern: French and German

Students with any language deficiency must remedy it during the summer prior to admission. The Latin examination will presume the equivalent of two years of college work; French and German require a capacity to read standard historical prose and render an accurate literal translation with the aid of a dictionary.

Qualifying Examination. The student will normally take the qualifying examination at the end of the second year of study. He will be examined on his period, and his category field.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he has completed course and residence requirements, has demonstrated proficiency in the required foreign languages, has passed the qualifying examination and has gained approval of his dissertation topic by the faculty of the program.

Dissertation and Defense. The student will normally define his dissertation topic in the term preceding the qualifying examination but in no case later than the beginning of his sixth semester in the program. When the completed dissertation has been accepted by the student's dissertation committee, the candidate will defend it at a final oral examination.

Courses of Instruction

Seminars

COMPARATIVE HISTORY 201a. Introduction to Comparative History

Introduction to the methods, concepts and literature of comparative history and the professional study of history in general.

Required for all first year students.

Staff

COMPARATIVE HISTORY 205a. Historiography

An examination of major recent trends in world historiography.

Mr. Barraclough

COMPARATIVE HISTORY 209b. Revolution and Rebellion in the Fourteenth Century (Pro-Seminar)

The focus is on urban and rural rebellion in France, England, Flanders, Italy, and the Byzantine Empire, examining various hypotheses as to the socio-economic or political background of the rebellions. Insofar as there was a revolutionary ideology, attention will be given to the forms of expression the ideology adopted.

Miss Laiou

COMPARATIVE HISTORY 230a and b. Revolts and Revolutions in Seventeenth Century Europe (Pro-Seminar)

An examination of various uprisings as a means of analyzing seventeenth century social structure comparatively. The first semester will be devoted to English society before and during the revolution of 1640–60, and the second will take up revolts on the continent, especially those in France and Spain. The course will be divisible, though students interested in comparative social and political history should take it as a full-year course.

To Be Announced

COMPARATIVE HISTORY 233a. The Development of the European City to 1800

Political institutions and social structure in various European cities from the High Middle Ages to the end of the eighteenth century. Readings and discussions will be supplemented by frequent lectures.

To Be Announced

COMPARATIVE HISTORY 236a. The Revolutions of 1848 (Pro-Seminar)

A comparative approach to the revolutions of 1848 and their repression across Europe. Weekly readings and discussions; research papers.

Mr. Binion



*COMPARATIVE HISTORY 255a. Comparative Revolutions

*COMPARATIVE HISTORY 260a. Growth of Modern Industrial Society
Urbanization and industrialization as categories in comparative history.

*COMPARATIVE HISTORY 260b. Topics in European Social History:
The Nineteenth and Twentieth Centuries

Studies in such topics as the impact of urbanization and industrialization, problems in modern demographic history, status in rural and urban society, alterations in work and leisure, and the relationship of social and institutional changes in liberal and welfare states. Principal but not exclusive consideration will be given to Britain, France and Germany.

*COMPARATIVE HISTORY 261b. The United States and Great Britain:
Comparative Perspectives, 1830-1930

A comparative examination of selected aspects of American and British society during the 19th and 20th centuries.

*COMPARATIVE HISTORY 262b. Chinese and European Political Theory
COMPARATIVE HISTORY 278b. The Age of Romanticism

Thought and sentiment, art and culture, in Europe from the fall of the Old Regime to the revolutions of 1848. Readings, discussions, research papers.

Mr. Binion

*COMPARATIVE HISTORY 279b. European Socialism

COMPARATIVE HISTORY 281b. Topics in the Comparative Modernization
of China and Japan

Mr. Schrecker

COMPARATIVE HISTORY 301a and b-312a and b. Research papers

301a and b. *Mr. Barraclough*

307a and b. *Mr. Freeze*

302a and b. *Mr. Berkowitz*

308a and b. *Mr. Izenberg*

303a and b. *Mr. Binion*

309a and b. *Ms. Laiou*

304a and b. *Mr. Black*

310a and b. *Mr. Schrecker*

305a and b. *Mr. Demos*

*311a and b. *Mr. Soliday*

306a and b. *Mr. Fischer*

312a and b. *Mr. Vanger*

COMPARATIVE HISTORY 321a and b-332a and b. Period Field Reading

321a and b. *Mr. Barraclough*

327a and b. *Mr. Freeze*

322a and b. *Mr. Berkowitz*

328a and b. *Mr. Izenberg*

323a and b. *Mr. Binion*

329a and b. *Ms. Laiou*

324a and b. *Mr. Black*

330a and b. *Mr. Schrecker*

325a and b. *Mr. Demos*

*331a and b. *Mr. Soliday*

326a and b. *Mr. Fischer*

332a and b. *Mr. Vanger*

COMPARATIVE HISTORY 341a and b-352a and b. Category Field Reading

341a and b. *Mr. Barraclough*

347a and b. *Mr. Freeze*

342a and b. *Mr. Berkowitz*

348a and b. *Mr. Izenberg*

343a and b. *Mr. Binion*

349a and b. *Ms. Laiou*

344a and b. *Mr. Black*

350a and b. *Mr. Schrecker*

345a and b. *Mr. Demos*

*351a and b. *Mr. Soliday*

346a and b. *Mr. Fischer*

352a and b. *Mr. Vanger*

* Not to be given in 1972-73.

COMPARATIVE HISTORY 401–412. Dissertation Research

- | | |
|-----------------------------|---------------------------|
| 401. <i>Mr. Barraclough</i> | 407. <i>Mr. Freeze</i> |
| 402. <i>Mr. Berkowitz</i> | 408. <i>Mr. Izenberg</i> |
| 403. <i>Mr. Binion</i> | 409. <i>Ms. Laiou</i> |
| 404. <i>Mr. Black</i> | 410. <i>Mr. Schrecker</i> |
| 405. <i>Mr. Demos</i> | 411. <i>Mr. Soliday</i> |
| 406. <i>Mr. Fischer</i> | 412. <i>Mr. Vanger</i> |

COMPARATIVE HISTORY 500. Registration in Time

In addition, the following courses may be taken as equivalent to Comparative History seminars.

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|---|---------------------------------------|
| HISTORY 129a. Rejecting Traditional Basis of Order | <i>Mr. Berkowitz</i> |
| HISTORY 129b. Divine Right Kinship | <i>Mr. Berkowitz</i> |
| HISTORY 133b. Lord and Peasant | <i>Messrs. Soliday and Schwalberg</i> |
| *HISTORY 134a. European Nobility of Eighteenth Century | |
| HISTORY 142b. France 1914–1940 | <i>Mr. Binion</i> |
| HISTORY 146a. Topics in German History: The Empire, 1871–1918 | <i>Mr. Binion</i> |
| HISTORY 147a. Russian and Soviet Intelligentsia | <i>Mr. Freeze</i> |
| HISTORY 148b. Revolutionary Russia | <i>Mr. Freeze</i> |
| HISTORY 167b. Topics in History of American Family Life | <i>Mr. Demos</i> |
| HISTORY 168b. Studies in American Religious History | <i>Mr. Fischer</i> |
| HISTORY 176a. The Family in Latin America | <i>Mr. Vanger</i> |
| HISTORY 180a. Modern China | <i>Mr. Schrecker</i> |
| HISTORY OF IDEAS 241a. Topics in Twentieth Century Intellectual History | <i>Mr. Izenberg</i> |

Contemporary Jewish Studies

Objectives

The graduate program in Contemporary Jewish Studies offers training for students interested in professional careers in the Jewish community and seeks to advance the field of contemporary Jewish studies. There are three concentrations:

1. Jewish education
2. Jewish communal service
3. Research in contemporary Jewish life

* Not to be given in 1972–73.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Contemporary Jewish Studies program. In addition, applicants are expected to submit results of either the Graduate Record Examination or the Miller Analogies Test. Also, there should be a statement which describes the applicant's Jewish training and background and future plans.

Faculty

Associate Professor LEON A. JICK, *Director*: American Jewish history.

Assistant Professor BERNARD REISMAN, *Associate Director*: American Jewish communal service.

*Professor NAFTALI C. BRANDWEIN: Modern Hebrew literature.

Professor LEONARD J. FEIN: Jewish social policy. Social change. Political sociology of Israel.

Professor ARNOLD GURIN: Social welfare planning and policy.

Professor BENJAMIN HALPERN: Modern Near East history. Political and social history of Palestine and Israel. Modern Jewish history.

*Professor MARSHALL SKLARE: Sociology of the Jewish community.

Associate Professor ROBERT SZULKIN: Yiddish.

Assistant Professor EMANUEL GOLDSMITH: Yiddish literature.

Assistant Professor SAUL WACHS: Jewish education.

Lecturer JOSHUA ROTHENBERG: Yiddish. Soviet Jewry.

See the Department of Near Eastern and Judaic Studies for other faculty in Judaic and Hebrew language.

Degree Requirements

Master of Arts

Program of Study. The program of study leading to the degree of Master of Arts will consist of 42 credits of graduate work and internship. This includes a first year program of 24 academic credits (8 half-courses) and a second year of 12 academic credits (4 half-courses) plus an internship experience in a Boston area Jewish educational or communal organization for approximately 15 to 20 hours a week (6 credits).

* On leave, 1972-73.

Students are expected to fulfill requirements in three areas: Jewish background, social sciences, and practice skills. A course of study is developed for each student taking into account previous academic experience.

All students are expected to participate in a weekly seminar in Contemporary Jewish Issues (non-credit).

Residence Requirement. All candidates are expected to spend two years in residence at Brandeis University.

Language Requirement. A candidate must demonstrate a reading knowledge of Hebrew or Yiddish. Students who do not meet this requirement must take appropriate language courses. They will not be granted credit for these deficiency courses.

Summer Study. Students who have not had an educational experience in Israel are required to participate in a 5 week summer seminar sponsored by the Lown Center and the Centre for Jewish Education in the Diaspora and The Jewish Agency. This is a recommended option for students who have been to Israel. Supplemental scholarship support is available for the summer seminar. The program takes place during the summer between the first and second year of study.

Master's Paper or Thesis. For concentrators in research in contemporary Jewish life, a Master's thesis is required based upon a research project. Concentrators in a phase of Jewish education or Jewish communal service will present a major substantive paper demonstrating competence within the field. This requirement is to be met during the second year.

Courses of Instruction

CJS 21. Introductory Yiddish

See Yiddish 1 for description.

Mr. Szulkin

CJS 24. Intermediate Yiddish

See Yiddish 2 for description.

Mr. Rothenberg

CJS 25. Readings in Yiddish Literature

See Yiddish 10 for description.

Mr. Goldsmith

HEBREW 1. Introductory Hebrew

Mr. Neustadt

HEBREW 2. Intermediate Hebrew

Mrs. Goldberg

HEBREW 10. Introduction to Post Biblical Literature

Mr. Segal

CJS 145a. Origins of Near Eastern Nationalism

See N.E.J.S. 149a for description.

Mr. Halpern

CJS 149a. History of Palestine and Contemporary Israel

See N.E.J.S. 145a for description.

Mr. Halpern

CJS 160a. The American Jewish Experience 1654–1885

A survey of American Jewish history from the earliest settlement to the consolidation by the 19th century German Jewish immigrants of their social, economic and ideological patterns.

Mr. Jick

CJS 160b. The Emergence of the American Jewish Pattern—1800 to the Present

The impact of mass immigration from Eastern Europe beginning in the 1880's. The challenge of socialism, Zionism, secular nationalism and religious reform. The emergence of the institutions, ideologies, life styles and cultural norms which constitute the American Jewish pattern.

Mr. Jick

*CJS 163a. The Sociology of the American Jew

See N.E.J.S. 163a for description.

*CJS 163b. Jewish Communal Structure and Organization

See N.E.J.S. 163b for description.

CJS 165b. The European Jewish Community: History and Traditions

See N.E.J.S. 165b for description.

Mr. Halpern

CJS 168a. The Culture of East European Jewry

See N.E.J.S. 168a for description.

Mr. Goldsmith

CJS 168b. History of the Jews in the Soviet Union

A study of the history of the Jews in the Soviet Union since 1917 of their legal and political status. Historical background; Soviet political structure, nationality policies. Jews as an ethnic and religious group in the context of the Soviet state structure; socio-economic, demographic, cultural aspects; oriental Jewish groups; experiment of Birobidzhan; relationship to Zionism and Israel.

Mr. Rothenberg

CJS 169a. Modern Jewish History: The Destruction of European Jewry

See N.E.J.S. 169a for description.

Mrs. Ofer

CJS 171b. Trends and Values in Yiddish Literature

See N.E.J.S. 171b for description.

Mr. Goldsmith

CJS 172a. Seminar in Yiddish Literature: Mendele Mokher Seforim, Sholom Aleichem and Y. L. Peretz

See N.E.J.S. 172a for description.

Mr. Goldsmith

CJS 173b. Seminar in Yiddish Literature: Contemporary Poetry

See N.E.J.S. 173b for description.

Mr. Goldsmith

CJS 179b. Social Development in Israel

See Anthropology 172b for description.

Mr. Weingrod

* Not to be given in 1972–73.

CJS 204a. Topics and Problems in Jewish Education

Selected issues related to the philosophy of Jewish education will be explored.
Mr. Wachs

CJS 204b. Conceptual Models for Jewish Education

An examination of models for Jewish education such as religious education, ethnic education and character education with a view to developing a synthesis.
 A seminar. *Mr. Wachs*

CJS 205a. Theory and Practice of Jewish Communal Service

An examination of small group dynamics and principles of informal education as they apply to Jewish communal and educational settings. *Mr. Reisman*

CJS 205b. Theory and Practice of Jewish Communal Service

An examination of theory and principles of leadership working with individuals and groups within the context of Jewish communal organizations. *Mr. Reisman*

CJS 207a. Issues in Jewish Public Policy

A consideration of key issues, both in intergroup relations (e.g., church-state, quotas, relations with other minority groups) and internal communal affairs (e.g., financing of Jewish schools, governance of the Jewish community). *Mr. Fein*

CJS 235a and b. Readings in Jewish Education

Mr. Wachs

CJS 249b. Contemporary Social Change in Israel

See N.E.J.S. 149b for description.

Mr. Halpern

CJS 250. Field Methods in Jewish Education and Communal Service

A supervised internship experience in a Jewish educational or communal organization during the second year of the program. A group seminar meets every other week with faculty to synthesize academic material with issues raised in practice.

Messrs. Reisman and Wachs

Cross-Registration at Boston College, Boston University and Tufts University

A full-time graduate student at Brandeis University may enroll in one graduate course at Boston College, Boston University or Tufts University. Brochures suggesting courses for cross-registration at each of the host institutions are available at the Graduate School Office of each institution.

A student who wishes to enroll in a course at one of these institutions should consult with the instructor in the particular course, and should expect to satisfy the prerequisites and requirements normally required for admission to that course, including adherence to the academic calendar of that course.

A student at Brandeis University who wishes to enroll in a graduate course at one of the host institutions should obtain a registration permit from the Graduate School Registrar, and should present this permit to the



Graduate School Registrar of the host institution. *In the academic years 1972-73 and 1973-74, a student may normally receive only one registration permit each semester.*

English and American Literature

Objectives

The graduate program in English and American literature is designed to offer training in the interpretation and evaluation of literary texts with some attention to the related scholarly disciplines, particularly history and linguistics. It also offers for candidates who have some ability in writing an opportunity to pursue this interest as a normal part of the graduate program.

Admission

Candidates for admission should have a Bachelor's degree, preferably with a major in English and American literature, and a reading knowledge of French, Italian, German, Greek, or Latin. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

Faculty

- Professor ROBERT O. PREYER, *Chairman*: Victorian literature.
 Professor J. V. CUNNINGHAM: Renaissance literature. Poetry.
 Professor EDWARD ENGELBERG: Victorian literature. Modern literature.
 Professor VICTOR HARRIS: Seventeenth century literature.
 ***Professor MILTON HINDUS: American literature. Contemporary literature.
 *Professor BENJAMIN B. HOOVER: Eighteenth century literature.
 Professor PHILIP RAHV: American literature. Criticism.
 ***Professor JOHN H. SMITH: Renaissance literature.
 *Professor AILEEN WARD: Nineteenth century literature.
 Visiting Professor ADRIENNE RICH: Poetry.
 *Associate Professor ALLEN R. GROSSMAN: Contemporary literature. Seventeenth century literature.
 *Associate Professor ALAN L. LEVITAN: Renaissance literature.
 Associate Professor RICHARD J. ONORATO: Nineteenth century literature.
 Associate Professor PETER SWIGGART: American literature.
 Assistant Professor ARLENE L. CLIFT: American literature.
 *Assistant Professor ARTHUR EDELSTEIN: American literature.
 Assistant Professor JAMES F. GOLDBERG: Nineteenth century literature.
 Assistant Professor JAY S. JACKENDOFF: Linguistics.
 Assistant Professor KAREN W. KLEIN: Medieval literature.
 Assistant Professor ALAN LELCHUK: Victorian literature. Creative writing.
 Assistant Professor JOHN NILES: Medieval literature.
 Assistant Professor S. SUSAN STAVES: Restoration literature.
 Visiting Assistant Professor ALAN CRAVEN: Renaissance literature.
 Lecturer JOHN BURT WIGHT: Teacher training.

Degree Requirements

Following are the degree requirements for the Department of English and American Literature. Students should also consult the Academic Regulations and General Degree Requirements sections on pages 26 and 33.

Master of Arts

Program of Study. Each student will take English 201a. In addition, the normal program will consist, in each term, of either (1) two seminars at the 200-level or (2) one seminar and two 100-level courses, as approved by the departmental adviser and the Director of Graduate Studies.

* On leave, 1972-73.

*** On leave, Spring Term, 1972-73.

Residence Requirement. The minimum residence requirement is one year, though students with inadequate preparation may require more.

Language Requirements. A reading knowledge of a major foreign language (modern European, ancient Greek, or Latin). The completion of the language requirements at another university does not exempt the student from the Brandeis requirement.

Qualifying Examination. A written and oral examination on one of several major texts. This Major Text Examination, which also serves as a qualifying examination for the Ph.D. program, will be given early in the Spring Term.

Qualifying Essays. Two papers on topics in different areas of English and American Literature must be submitted to the Director of Graduate Studies one month before the end of the Spring Term for evaluation by the Committee on Graduate Studies. These papers will ordinarily have been written in seminars at Brandeis University.

Doctor of Philosophy

Admission to the Ph.D. Program. (1) Students who complete, with distinction, the M.A. requirements at Brandeis University are admitted to the Ph.D. Program by the Department upon recommendation of the Committee on Graduate Studies.

(2) Students who enter with a Master's degree or a full year of graduate work in English from another university are required to fulfill the qualifying examination and qualifying essay requirements described above under the Master of Arts Program. Provided these requirements are fulfilled, such students may, at the Department's discretion, be admitted to the Ph.D. Program after successful completion of a semester at Brandeis and upon recommendation by the Committee on Graduate Studies. At the time of admission, up to a year's residence and course credit for work completed elsewhere may be granted.

Program of Study. After admission to the Ph.D. Program, each student will plan a program of study with a faculty adviser of his choice; each such program must be approved by the Director of Graduate Studies. The student may take any combination of seminars, regular courses and faculty-directed independent reading courses which will yield a coherent program of study as approved by the student's adviser and by the Director of Graduate Studies.

Residence Requirement. The minimum residence requirement is one year beyond the Master's degree or two years beyond the Bachelor's. Each year of residence is defined by the Graduate School as (1) 8 half-courses and (2) payment (either by the student or by scholarship) of a full year's tuition.

Other Requirements

1. Language requirement. A reading knowledge of one major foreign language (modern European, ancient Greek, or Latin), demonstrated in an examination administered by the English Department. Satisfaction of the language requirement for the Master's degree at Brandeis completes the language requirement for the Ph.D. as well; completion of the language requirements at another university does not exempt the student from the Brandeis requirement.

2. One of the following, as relevant to a student's research and career plans and as approved by his adviser and the Director of Graduate Studies: (a) a reading knowledge of a second major foreign language (modern European, ancient Greek, or Latin); (b) one course at the level of a graduate seminar in literature of a foreign language or in a discipline other than English which is related to the student's plans.

Training in Teaching. Some experience in teaching is normally required. Those students who are not Teaching Assistants may arrange for apprentice teaching with the Director of Teacher Training.

Admission to Candidacy. A student will be recommended by the Department for Admission to Candidacy for the Ph.D. degree after he has completed with distinction a program of studies which demonstrates knowledge and mastery in the field of English and American Literature, has passed all departmental qualifying examinations; has completed all language requirements; and has submitted a formal dissertation proposal and (following its approval by the student's dissertation director) successfully defended the proposal before a committee appointed by the Director of Graduate Studies.

Dissertation and Defense. Each student will submit a dissertation in a form approved by his dissertation director and by a committee appointed by the Director of Graduate Studies. He will defend the dissertation at a Final Oral Examination. The dissertation may be a monograph, a series of closely related essays, a bibliographical project or a textual project.

History and Structure of English

The department also offers an alternative program in the history and structure of the English language, with specialization in Old, Middle or Early Modern English. For details, address the chairman of the Department.

Courses of Instruction

ENGLISH 121a. Old English

An introduction to the language and literature of the Anglo-Saxons. Readings will include the major extant short poems, including *The Wanderer*, *The Seafarer*, and *The Dream of the Rood*.
Mr. Niles

ENGLISH 121b. Beowulf

Mr. Niles

ENGLISH 123b. Chaucer

The major works of Chaucer read in the original language, with emphasis on two themes: Chaucer's contribution to narrative art and his implicit theory of fiction and Chaucer's work as the reflection of traditions of later medieval Christian culture.
Ms. Klein

ENGLISH 125a. The Short Poem: 1500–1640

Mr. Cunningham

*ENGLISH 127b. Victorian Poetry

ENGLISH 140a. Shakespeare

Intensive study of a small number of Shakespeare's plays including some less well-known plays and their backgrounds.
Mr. Smith

ENGLISH 142a. Elizabethan and Jacobean Drama

A survey of major dramatic works, excluding Shakespeare, from roughly the mid-sixteenth to the mid-seventeenth centuries.
Mr. Craven

*ENGLISH 143b. Music and Poetry: Their Changing Relationships

A survey of English lyric poetry in its literal sense of "texts to be sung." The changing relationships between poets and composers and the esthetic and social motivations behind them.

ENGLISH 145b. Religious Poetry of the Seventeenth Century

Mr. Craven

ENGLISH 150a. Classical Background of English Poetry: Epic and Pastoral

Mr. Wight

ENGLISH 150b. Classical Background of English Poetry: Drama, Lyric, Satire

In these two courses the strength and quality of "the classical impulse" in various periods of English poetry will be explored through a consideration of a number of Greek and Roman literary works which will be compared to related English works. Among the authors to be read in the first semester are Homer, Virgil, Milton, Theocritus, Spenser, Shelley and Arnold; in the second semester Plautus, Seneca, Jonson, Shakespeare, Horace, Juvenal, Johnson and others. The two offerings may be taken separately.
Mr. Wight

* Not to be given in 1972–73.

*ENGLISH 155b. Milton and Blake

*ENGLISH 160a. Augustan Satire

Satire in prose and poetry during the earlier part of the eighteenth century. Swift, Defoe, Pope, Gay, Fielding, and other writers.

*ENGLISH 165b. Restoration Drama

Comedy, heroic drama, and political tragedy. Dryden, Wycherly, Etherege, Shadwell, Lee, Otway, and Congreve.

ENGLISH 167a. Faces of Woman in the Poetry of Man: 19th and 20th Centuries

We will deal with the work of selected English and American poets, including Keats, Browning, Yeats, Lawrence, Jarrell, Stevens, Williams, Kinnell and Wright. The course will focus on the use of woman as image, subject, metaphor and muse. Considerable independent work and background reading will be expected.

Prerequisite: A course in modern or 19th century English or American poetry, or permission of the instructor. *Ms. Rich*

ENGLISH 170a. Some Theories of Fiction and Style

The history of criticism, ancient and renaissance, with some more recent texts. *Mr. Cunningham*

ENGLISH 171b. Romantic Poetry

Emphasis on Blake, Wordsworth, and Coleridge.

Mr. Onorato

*ENGLISH 173b. Culture and Society: Literary-Social Criticism and Social Theory in the Nineteenth Century

A comparative analysis of the growth of the ideas of culture (Coleridge, Carlyle, Arnold, and others) and the development of social theory (de Tocqueville, Mill, Engels, Marx, and others).

*ENGLISH 175b. Literature and Poverty in Twentieth Century America

Study will involve works of history, anthropology, and sociology as well as fiction.

*ENGLISH 177a. The Russian Novel: Tolstoy and Dostoevsky

*ENGLISH 178b. Studies in the Literature of Nineteenth Century Social Criticism

*ENGLISH 179b. The South in Fiction

ENGLISH 180a. Change and Continuity in Modern Literature

Readings in modern leading works drawn from representative European authors such as Camus, Thomas Mann, Dostoevsky, Kafka, Tolstoy, Beckett, etc.

Mr. Rahv

ENGLISH 182b. American Drama

Mr. Swiggart

ENGLISH 183b. Leading American Writers of the Nineteenth Century

Mr. Rahv

ENGLISH 184a. American Literature of the Twentieth Century

Readings in prose, poetry, and the drama.

Mr. Rahv

ENGLISH 186a. Immigrant Jewish Backgrounds and Modern American Literature**ENGLISH 188b. Linguistics and Literature****ENGLISH 191a. Introduction to Linguistics**

This course focuses on the outstanding questions which an adequate theory of natural language must answer and considers in some detail current attempts to answer them. It will, in passing, touch upon the relevance of the emerging theory to questions of philosophical, psychological, biological and literary import.

Mr. Jackendoff

ENGLISH 191b. Introduction to Linguistic Structure

The aim of this course is to awaken the student's awareness of how much a speaker of English knows about his language that he has not been explicitly taught, to show that this knowledge requires explanation, and to develop a theory of linguistic structure which can account for it. No knowledge of formal grammar or linguistics is assumed.

Mr. Fidelholtz

ENGLISH 192b. History of the English Language

This course begins with an introduction into the sound system of modern English. It then looks at the sound systems of earlier stages of the language and examines the ways in which earlier stages changed into later stages. Finally, it attempts to generalize from these instances to a theory of linguistic change.

Ms. Maling

ENGLISH 193a. Problems in Phonology

A seminar in phonology in the light of universal grammar.

Prerequisite: Consent of the instructor.

Mr. Fidelholtz

ENGLISH 196a. Semantics and Linguistics

This course will explore the semantic structure of language in terms of current linguistic theory. Topics to be covered include functional representation, focus and supposition, reference, and the nature of semantic markers.

Prerequisite: English 191a or 191b or background in analytic philosophy.

Mr. Jackendoff

* Not to be given in 1972-73.



ENGLISH 196b. Syntactic Investigations in an Unfamiliar Language

In this course the student will be confronted with a native speaker of an unfamiliar language (i.e., neither English nor Yiddish). The purpose of the course will be to figure out what it is that the speaker knows when he knows the language.

Prerequisite: English 191a or 191b.

Mr. Jackendoff

ENGLISH 197aR. Syntactic Theory

Ms. Maling

ENGLISH 197b. Problems in Syntax

A study of some aspects of English syntax which are more complex than those discussed in the introductory courses.

Prerequisite: English 191a or 191b.

Mr. Jackendoff

ENGLISH 199a and b. Directed Research in Linguistics

Mr. Jackendoff

ENGLISH 101a and b. Directed Writing: Fiction

Limited enrollment. Permission of the instructor.

Mr. Lelchuk

ENGLISH 102a and b. Directed Writing: Poetry

Prerequisite: Permission of the instructor. Prospective students should submit manuscripts (no fewer than five and no more than ten poems).

Ms. Rich

Seminars

ENGLISH 200a. The English Seminar: Methods of Literary Study

A *non-credit* course required of all first-year graduate students.

Mr. Swiggart

ENGLISH 201aA. History and Theory of Criticism: From Plato to

Dr. Johnson

Mr. Cunningham

ENGLISH 201bB. History and Theory of Criticism: Late Neo-Classicism,

Romanticism, Modernism

Mr. Engelberg

ENGLISH 210bB. Middle English

Ms. Klein

ENGLISH 218aA. Spenser and Milton

Mr. Harris

ENGLISH 225aA. Eighteenth Century Literature

Ms. Staves

ENGLISH 231bB. Wordsworth and Yeats

Mr. Onorato

ENGLISH 235aA. Victorian Poetry and Poetics

Mr. Preyer

ENGLISH 248bB. Lawrence and Conrad

Mr. Rahv

ENGLISH 250bB. American Poetry

Mr. Cunningham

ENGLISH 295b. Studies in a Major Text

Required of all first year students.

Mr. Swiggart

ENGLISH 311. Seminar in Teaching

Mr. Goldberg

ENGLISH 350–369a and b. Directed Research

Open to advanced graduate students with the consent of the instructor and the Director of Graduate Studies.

351a and b. <i>Mr. Edelstein</i>	361a and b. <i>Ms. Ward</i>
352a and b. <i>Mr. Cunningham</i>	363a and b. <i>Ms. Klein</i>
353a and b. <i>Mr. Harris</i>	364a and b. <i>Ms. Staves</i>
354a and b. <i>Mr. Hindus</i>	365a and b. <i>Mr. Goldberg</i>
356a and b. <i>Mr. Onorato</i>	366a and b. <i>Ms. Clift</i>
357a and b. <i>Mr. Preyer</i>	367a and b. <i>Mr. Jackendoff</i>
358a and b. <i>Mr. Rahv</i>	368a and b. <i>Mr. Lechuk</i>
359a and b. <i>Mr. Smith</i>	369a and b. <i>Mr. Engelberg</i>
360a and b. <i>Mr. Swiggart</i>	

ENGLISH 400–410a and b. Dissertation Research

400. <i>Mr. Cunningham</i>	406. <i>Mr. Preyer</i>
401. <i>Mr. Grossman</i>	407. <i>Mr. Rahv</i>
402. <i>Mr. Harris</i>	408. <i>Mr. Smith</i>
403. <i>Mr. Hindus</i>	409. <i>Mr. Swiggart</i>
404. <i>Mr. Hoover</i>	410. <i>Ms. Ward</i>
405. <i>Mr. Onorato</i>	

History

See Comparative History (page 80) and History of Ideas (page 107).

History of American Civilization

Objectives

The graduate program in the History of American Civilization, leading to the degree of Doctor of Philosophy in History, has been designed primarily to educate professional scholars and teachers of American history. The curriculum emphasizes both a comprehensive understanding of American history and the mastery of historical research and writing. For a comparative view of the American experience, students will undertake selective studies in modern European, Asian, Latin American or African history. A related field of study will be defined, according to individual background and interest, in one of the following ways:

1. training in one of the disciplines of the social sciences or humanities—politics, international relations, or literature, for example—to provide perspectives and methods that can illuminate historical problems;
2. a thematic field in American history, involving a distinctive subject matter and discipline: for example, American social history, American legal and constitutional history, American intellectual history, or American art and architecture.

3. a topic in comparative history, involving a distinctive subject matter and discipline: 20th century British and American literature, for example, or 19th century emigration/immigration, or 18th century American and European political and social philosophy.

A small, select student body will work in close cooperation with the faculty. From the beginning, individual programs of study will be developed to prepare students for their oral qualifying examinations and to guide them toward their dissertation research. Normally, the first year's work is concentrated in American history, including substantial experience in directed research and a critical approach to problems of historiography. Second year students, while pursuing further directed research, chiefly are encouraged to choose courses to complete their preparation in the examination fields. Studies in related fields will be arranged individually with appropriate members of the University's Graduate Faculty, either through standard courses or directed readings. For selected students with appropriate qualifications, there are opportunities for advanced study and research with distinguished scholars at neighboring universities in such fields as legal history, business history and—under a cooperative agreement with The Fletcher School of Law and Diplomacy—international relations. Consent of the Chairman of the program, and of The Fletcher School is required. Applicants should note with care the four parts of the examination, specified under *Degree Requirements*, in which all students are expected to demonstrate proficiency.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this program. An undergraduate major in history is the preferred preparation for admission, and the student's undergraduate curriculum should include some fundamental courses in American history and related fields in the social sciences or humanities. Students with the M.A. or a professional degree in history, law, or other related fields are invited to apply. Above all, the admissions committee must be satisfied that the applicant's interest in the History of American Civilization is serious and that his aspirations are professional. Students interested in Crown Fellowships (see page 13) or in the special arrangements for study in professional fields at neighboring universities, noted above, should submit applications by February 15, if possible.

Faculty

Executive Committee. Professor MARVIN MEYERS, *Chairman*; Professors EUGENE C. BLACK, DAVID HACKETT FISCHER, MORTON KELLER, JOHN P. ROCHE; Associate Professor JOHN P. DEMOS; Assistant Professors GERALD S. BERNSTEIN, JAMES R. GREEN.

Staff:

- *Professor EUGENE C. BLACK: Comparative Anglo-American history.
- Professor DAVID HACKETT FISCHER: Social and political structure. Early Republic.
- Professor MORTON KELLER: Legal and political institutions. Modern America.
- Professor MARVIN MEYERS: Ideas and politics. Jacksonian America.
- *Professor JOHN P. ROCHE: Constitutional law and politics. Contemporary history.
- Associate Professor JOHN P. DEMOS: Family and community. Colonial America.
- Assistant Professor GERALD S. BERNSTEIN: American art and architecture.
- Assistant Professor JAMES R. GREEN: Labor and reform movements. Modern America.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. Applications from persons seeking a terminal M.A. degree are not welcome. However, the M.A. degree in History may be awarded to those who (1) have successfully completed one full year of residence at Brandeis University (8 half-courses), including two "200" level research courses, and (2) have passed the foreign language requirement, and (3) satisfactorily completed History 200a and b.

Doctor of Philosophy

Program of Study. Doctoral candidates must complete two years in residence at Brandeis, and a minimum of sixteen half-courses. Programs of study and concentration will be formulated for each student, subject to the approval of the Executive Committee. Incoming students normally will be expected to take History 200a and b and one full course of Directed Research

in American History in their first year of residence. The Committee may, at its discretion, grant a student transfer credit of up to one year toward the Ph.D. residence requirement for relevant graduate or professional work done elsewhere. Application for such credit shall be considered only after a student has completed one semester's residence in a full-time program. The second 200-level Directed Research course may be waived by the committee on the basis of a Master's thesis or comparable research project at the graduate or professional level done elsewhere.

Language Requirement. A high level of reading proficiency in one foreign language is required of all students. Students are expected to pass the language examination during the first year of residence. A student who has not passed his foreign language examination by the end of his first year is not eligible for financial aid from the University for the second year. The completion of language requirements at another university does not exempt the candidate from the Brandeis requirement. Special review classes will be available.

Qualifying Examination. Each doctoral candidate must pass at the doctoral level a qualifying examination in the following four fields: (1) general American history; (2) a period of specialization in American History; (3) an area of comparative modern European, Asian, Latin American or African history; (4) a related field of study, involving one of the disciplines in the social sciences or the humanities. (Note the three alternative approaches for the fourth field specified under Objectives.) The period of specialization will normally be selected from the following: 1607–1763, 1763–1815, 1815–1877, 1877–1914, 1914–present. The special period may be redefined on request, for good academic reasons. Proposed comparative and related fields must be approved by the Executive Committee. Students entering the program without previous graduate training in American history are expected to take the Qualifying Examination no later than the end of their fifth semester of residence and must pass the examination by the end of the sixth semester. Students who have earned an M.A. in history elsewhere, or who have one year of transfer credit for work taken elsewhere, are expected to take and pass the Qualifying Examination by the end of their second year in the program.

Unless the student elects a single three-hour oral examination on all four fields, the Qualifying Examinations will be taken separately in each of the fields, with the general American field coming at the end. For each of the fields (2), (3), and (4), as above, the student will choose one appropriate professor with the approval of the Chairman of the program. That professor, in consultation with the student, will define the requirements, course of preparation, and mode of examination (written and/or oral) for the field.

For the general American field, the Chairman will appoint two members of the Executive Committee as examiners. The student may choose a one-hour oral examination or a three-hour written examination followed, if the examiners so require, by an oral examination. In either case, the two professors in consultation with the student will define in advance the major themes or problems on which the examination will be based. So far as possible, fields (3) and (4), as above, should be selected with a view to broadening and deepening the student's understanding of his American history fields, and providing valuable background for his dissertation work.

With the consent of the Chairman and the professor concerned, qualified students in appropriate cases may be examined in fields (3) or (4), as above, by a faculty member at another University. Moreover, with the consent of the Executive Committee, examinations in fields (3) or (4), as above, may be waived for students with the M.A., J. D., or other advanced degrees that represent a level or kind of training and achievement fully equivalent to those required in the Brandeis examinations for those fields.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree upon satisfactory completion of the following: course and residence requirements, demonstration of a high level of proficiency in one foreign language, and the qualifying examinations.

Dissertation and Defense. The candidate will be required to prepare a prospectus for his dissertation to be submitted for approval to the Committee. When the dissertation is accepted by the Committee, a final oral examination will be scheduled at which the candidate must successfully defend his dissertation before the Committee and other members of the faculty who may participate. After a candidate has successfully defended his dissertation, he will give a public lecture.

Courses of Instruction

HISTORY 100b. Conversations on America (Pro-Seminar)

A search for the determination of a voluntary society. The inquiry will range through works by Miller, Tocqueville, Hartz, Bailyn, Woodward, Boorstin, Turner and others.

Enrollment limited.

Mr. Fischer

HISTORY 150b. American Colonial History

Major trends in the social, intellectual and political life of the American colonies, up to about 1750.

Mr. Demos

HISTORY 151aR. The Founding of the American Republic

An inquiry into the ideas and movements that formed a new republican regime in the United States. How did the Founders understand their heritage and circumstances? What kind of society and nation did they mean to create? What were the sources of division and conflict? Both sources and historical writings will be studied.

Mr. Meyers

HISTORY 152b. Problems of Democracy in Jacksonian America (Pro-Seminar)

An examination of the nature and consequences of democratization in American society and politics, emphasizing issues of interpretation. The point of departure will be Tocqueville's classic analysis of democracy in America.

Mr. Meyers

HISTORY 153b. Modern America in Historical Perspective

An examination of the political economy and social history of the United States in the twentieth century.

Mr. Green

*HISTORY 161b. The United States and Great Britain: Comparative Perspectives, 1830–1930 (Pro-Seminar)

A comparative examination of selected aspects of American and British society during the 19th and early 20th centuries.

HISTORY 163a. The American Political Tradition: Origins to the Civil War

An examination of some critical arguments of American history over the problems of political life. What values and what views or reality guided Americans in their choice of political ends and means? How deep were the conflicts of ideas, how sharp the breaks between generations? Selected contemporary writings will form the primary basis for discussion.

Mr. Meyers

HISTORY 164a. The American Polity

An examination of the evolution and character of the modern American political system.

Mr. Keller

HISTORY 165a. The Search for Community in America: A Social History of the United States, 1620–1860

A study of American communities from the Colonial period to the Civil War emphasizing the struggle to retain communal ways of life in an emerging marketplace economy. Three short essays will be required in the course of the term along with a final take home essay.

No prerequisite, but a general knowledge of American history would be helpful.

Mr. Green

HISTORY 165b. American Communities in Mass Society: A Social History of the United States, 1860–1960

A continuation of History 165a, focusing on the effects of industrialization and urbanization on American communities.

History 51a or 165a would be helpful as background.

Mr. Green

HISTORY 167a. History and Psychology (Pro-Seminar)

An exploration of certain basic themes and problems in "interdisciplinary" study between the fields of history and psychology. Discussion will focus on a range of topics: biography, the social psychology of mass movements, modal personality, etc. Some prior acquaintance with both fields will be helpful.

To be run as a conference with enrollment limited to 12.

Mr. Demos

HISTORY 168b. Studies in American Religious History

Topics to be treated will include the liberalism of theology, the democratization of church government, and the growth of revivalism.

Mr. Fischer

HISTORY 169a. History of American Radicalism: Agrarianism, Populism, and Socialism

A seminar designed to examine rural radical movements in American history, especially Southern and Western Populism and Socialism between 1880 and 1920. Readings and discussion of primary and secondary sources. Two short essays and one longer paper are required.

Enrollment limited.

Mr. Green

HISTORY 200a. An Introduction to Themes and Problems (Pro-Seminar)

Readings, commentary, and discussion addressed to some major ways of studying, interpreting, and writing history, with emphasis upon modern approaches to history that are represented in the several Brandeis graduate programs: e.g., psycho-history, comparative history, quantitative social history, institutional history, intellectual history, legal history. A series of brief papers will provide the basis for a credit or fail grade.

*Staff of History of American Civilization,
Comparative History and History of Ideas Programs*

HISTORY 200b. An Introduction to Themes and Problems of American Historiography (Pro-Seminar)

Students will elect one of several approaches offered by members of the History of American Civilization faculty, each designed to sample a broad range of major American historical works and to develop a capacity for critical analysis of thesis, method and style. A series of brief papers will provide the basis for a credit or fail grade.

Staff

HISTORY 201aA–210aA. Directed Research in American History

Students will normally elect one of the following in the fall term of the first and the second years. Each is designed to provide experience in designing, researching and writing a substantial essay of a monograph kind, based on extensive use of sources. This is the equivalent of a full course and extends the due date for the final draft of the paper to March 1, to permit sufficient time for a major project. Specific research topics are selected by the student in consultation with the professor.

201aA. Topics in American Art and Architecture

Mr. Bernstein

203aA. Topics in the History of Community and Family with
emphasis on the Colonial Period

Mr. Demos



204aA. Topics in Social History, with emphasis on the Early Republic
Mr. Fischer

205aA. Topics in the History of Legal and Political Institutions, with
emphasis on Modern America
Mr. Keller

207aA. Topics in Political and Social Thought, with emphasis on the
period 1750–1850
Mr. Meyers

*209aA. Topics in Constitutional and Political History, with emphasis
on the 20th century.

210aA. Topics in Social History, with emphasis on Modern America
Mr. Green

HISTORY 301–309. Readings in the History of American Civilization

The following are available in either semester.

301a or b. *Mr. Bernstein* 304a or b. *Mr. Fischer*

302a or b. *Mr. Black* 305a or b. *Mr. Keller*

303a or b. *Mr. Demos* * 309a or b. *Mr. Roche*

HISTORY 401–409. Dissertation Research

401. *Mr. Bernstein* 405. *Mr. Keller*

403. *Mr. Demos* 407. *Mr. Meyers*

404. *Mr. Fischer* 409. *Mr. Roche*

For courses available to History of American Civilization students in other historical areas, see the listings by departments and programs in the Graduate School and College catalogs, especially under Comparative History and History of Ideas. For courses at The Fletcher School of Law and Diplomacy, available with the consent of the chairman of this program, and The Fletcher School, see their catalog in the History Department office.

* Not to be given in 1972–73.

History of Ideas

Objectives

The program in the History of Ideas leads to the degree of Doctor of Philosophy in the History of Ideas. It is designed to give students a broad understanding of the historical development of ideas in several fields of thought, together with thorough training in the history of one of those fields. In practical terms, it prepares students, variously, for teaching and research in intellectual history and for historically-oriented teaching and research in philosophy and social science.

The program treats past thought systematically as well as historically, and is essentially interdisciplinary in character. The endeavor throughout is to examine the genesis of intellectual positions within a complex socio-historical matrix, the interrelation between theoretical and practical activities, and the role of ideas in human affairs.

A student trained in the program is expected to acquire a good general grasp of the theoretical and methodological problems involved in the comparative historical study of ideas, and of the general and intellectual history of a given period. He is expected also to attain special competence in dealing systematically as well as historically with any one field of thought (philosophical, scientific, social) within the period of chronological concentration, and with the classic texts of that field as a whole. Finally, he is expected to acquire a competent knowledge of some branch of an external subject related to his special interests (for example, in philosophy: epistemology, philosophy of science, or social and political philosophy; in history: a period of national history or a category of comparative history; in sociology: political sociology, sociology of literature, or social psychology).

Admission

In addition to the general requirements for admission to the Graduate School specified in an earlier section of this catalog, applicants who propose to specialize in the History of Philosophical Thought should normally present an undergraduate major in philosophy, together with evidence of adequate preparation in history or one of the social sciences; applicants who propose to specialize in the History of Scientific Thought should normally present *either* an undergraduate major in a natural science, together with evidence of adequate previous experience in history and philosophy *or* an undergraduate major in history or philosophy, together with evidence of adequate previous experience in a natural science; applicants who propose to specialize in the History of Social Thought should normally present an undergraduate major in history, philosophy, or one of the social sciences.

Faculty

Professor PETER DIAMANDOPOULOS, *Chairman*; Professors HENRY D. AIKEN (Philosophy), RUDOLPH BINION (History), EGON BITTNER (Sociology), *EUGENE C. BLACK (History), WILLIAM A. JOHNSON (History of Ideas), Assistant Professor GERALD IZENBERG (History of Ideas).

The following departments are associated with the History of Ideas program: Classics, Economics, English and American Literature, Literary Studies, History, Near Eastern and Judaic Studies, Philosophy, Politics and Sociology.

Degree Requirements

Master of Arts

In principle, only applicants for the Ph.D. program are accepted. There is no M.A. program as such. However, the M.A. degree will be awarded upon completion of the following requirements:

1. One year of residence as a full-time student.
2. Successful completion of a prescribed course of study.
3. Demonstration of proficiency in Latin, French or German.
4. Submission, by May 1, of an acceptable, substantial, scholarly paper written during the course of the year.

Doctor of Philosophy

The requirements for the Ph.D. degree are as follows:

1. Two years of residence as a full-time student.
2. Successful completion of a prescribed course of study.
3. Demonstration of proficiency in two of the following languages: Latin, French, German; and in any additional language needed for advanced work in the student's area of specialization.
4. Submission, by May 1 of the student's first year of residence, of an acceptable, substantial, scholarly paper written during the course of the year.
5. Passing the Qualifying Examinations with distinction.
6. Admission to candidacy.
7. Submission of a doctoral dissertation approved by the department.
8. Successful defense of the dissertation.

Program of Study. Each student will plan his program of study in consultation with his adviser.

* On leave, 1972-73.

Language Requirements. A proficient reading knowledge of two of the following languages is required: Latin, Greek, French, German, Italian, Spanish. A student whose further work requires the use of an additional language must first demonstrate proficiency in that language. Students are expected to pass the examination in at least one of the two required languages in their first year of residence, the other in the second year.

Qualifying Examinations. The Qualifying Examinations are to be taken toward the end of the second or at the beginning of the third year of graduate study, and in no case later than the end of the third year. The form of the examinations—written, oral, “take-home,” etc.—is decided by the student in consultation with his adviser. The examinations will cover:

1. The History of a Field of Thought within that Period.
2. The General History of that Field, with emphasis on the classics thereof.
3. The Intellectual History of that Period.
4. An External Subject.

The requirements in the External Subject may be and is usually met by completing with distinction two courses in that subject.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he has completed the requirements as to residence, study, language proficiency, paper, qualifying examinations, and when the subject of his dissertation has been approved by the department. Such approval depends, in part, upon the student's passing with distinction, an oral examination in the general area of his proposed topic.

Dissertation and Final Oral Examination. Once a student has been admitted to candidacy for the Ph.D. degree, the department chairman will appoint a dissertation adviser and a dissertation committee. The dissertation will be written under the supervision of the adviser. It will be read by the committee, and by such external readers as the committee may wish to consult. When the dissertation has been accepted, the candidate will defend it in a final oral examination.

Courses of Instruction

HISTORY OF IDEAS 200c. Introduction to the History of Ideas

Exploration of various approaches to the history of ideas, and of the underlying theoretical problems.

Required of all first-year students.

Staff

HISTORY OF IDEAS 104a. Sociology of Knowledge

See Sociology 110a.

Mr. Wolff

*HISTORY OF IDEAS 106a and b. Sociology of Literature
See Sociology 106a and b.

*HISTORY OF IDEAS 107b. Sociology of Science
See Sociology 154b.

HISTORY OF IDEAS 109b. Philosophy of Science
See Philosophy 140b.

Mr. Burian

HISTORY OF IDEAS 110b. Philosophy of Social Science
See Philosophy 148b for description.

Mr. Burian

HISTORY OF IDEAS 125a. Introduction to Christian Thought

An investigation of a number of major thinkers of the Christian theological tradition, including St. Paul, Augustine, Thomas, Luther and Schleiermacher. Special attention will be given to primary source materials.

Mr. Johnson

HISTORY OF IDEAS 126a. Philosophy of Religion

An introduction to the kinds of intellectual problems with which the religiously committed must deal: the problem of God, "God-talk" free-will and determinism, the problem of suffering, life after death, the relation of religion to morality, etc.

Mr. Johnson

HISTORY OF IDEAS 126b. Philosophy of Religion

A continuation of History of Ideas 126a.

Mr. Johnson

HISTORY OF IDEAS 130a. Humanism

The evolution of a new cultural elite, life-style and philosophy of man. The medieval precedents and the revival of ancient values and outlooks. Humanism and religious reform before the Reformation. Printing and rise of the humanist class. The new scholarship and the new literature.

Mr. Berkowitz

HISTORY OF IDEAS 130b. The Reformation

Transformation of the Catholic establishment and the religious outlook in the 15th century. The religious revolution of the 16th century: Luther, Calvin, Henry VIII and the radical reformers. The Catholic reaction and counter-reform.

Mr. Berkowitz

HISTORY OF IDEAS 141b. The Age of Romanticism

A comparative approach to thought, culture, and the arts in Europe, 1789–1848. Pro-seminar.

Mr. Binion

HISTORY OF IDEAS 143aR. The French Enlightenment

See French 118b for description.

Prerequisite: Ability to read and understand spoken French.

Mr. Gendzier

HISTORY OF IDEAS 144a. The Intellectual History of Contemporary Europe, 1890–1930

A survey of dominant thinkers and currents of thought, with emphasis on the disintegration of the rationalist tradition in European culture. *Mr. Izenberg*

HISTORY OF IDEAS 144b. The Intellectual History of Contemporary Europe, 1930–1970

A survey of dominant thinkers and currents of thought, with emphasis on the response to irrationalism in contemporary European culture. *Mr. Izenberg*

HISTORY OF IDEAS 145b. Contemporary Christian Theology

An examination of several recent thinkers of the Christian intellectual community. Tillich, Reinhold Niebuhr, Barth, Bultmann, Nygren, Bonhoeffer will be discussed. Attention will be given to methodological problems, particularly as theology relates to philosophy. *Mr. Johnson*

HISTORY OF IDEAS 148a. Modern Jewish Intellectual History to 1870

See NEJS 166a for description.

Mr. Halpern

HISTORY OF IDEAS 161aR. Plato

See Philosophy 105aR for description.

Mr. Sommers

***HISTORY OF IDEAS 161b. Aristotle**

See Philosophy 105b for description.

HISTORY OF IDEAS 164a. The Categories of the Spiritual Life in Jewish Neoplatonism

See NEJS 135a for description.

Mr. Altmann

HISTORY OF IDEAS 164b. Continental Rationalism

See Philosophy 143aR for description.

Mr. Diamandopoulos

HISTORY OF IDEAS 166a. Spinoza's Ethics

See NEJS 136a for description.

Mr. Altmann

***HISTORY OF IDEAS 167b. British Empiricism**

See Philosophy 143b for description.

HISTORY OF IDEAS 168a. Kant

See Philosophy 167a for description.

Mr. Greenberg

HISTORY OF IDEAS 169aR. American Pragmatism

See Philosophy 147aR for description.

Mr. Aiken

HISTORY OF IDEAS 170bR. Contemporary Analytic Philosophy

See Philosophy 133bR for description.

Mr. Burian

HISTORY OF IDEAS 171a. Social and Political Philosophy

See Philosophy 151a for description.

Mr. Diamandopoulos

* Not to be given in 1972–73.

HISTORY OF IDEAS 171b. Philosophy of Mind

See Philosophy 156b for description.

Mr. Sommers

HISTORY OF IDEAS 180a. The Revolution of 1848

See History 136a for description.

Mr. Binion

HISTORY OF IDEAS 181b. Topics in European Social History: The Nineteenth and Twentieth Centuries

See History 138b for description.

Mr. Barracrough

HISTORY OF IDEAS 182a. The World Since 1929

See History 139a for description.

Mr. Barracrough

HISTORY OF IDEAS 183a. The Russian and Soviet Intelligentsia

See History 147a for description.

Mr. Freeze

HISTORY OF IDEAS 184a. History of American Radicalism: Agrarianism, Populism and Socialism

See History 169a for description.

Mr. Green

HISTORY OF IDEAS 185a. History and Psychology

See History 167a for description.

Mr. Demos

HISTORY OF IDEAS 186a. Rejecting the Traditional Basis of Order: Marsilio of Padua, Machiavelli and Hobbes

Pro-Seminar. The revolution in concepts of authority; the new philosophy and science of politics.

Mr. Berkowitz

HISTORY OF IDEAS 186b. Divine Right Kingship

Seminar. The politics of stabilization in Europe and England in the 16th and 17th centuries.

Mr. Berkowitz

HISTORY OF IDEAS 190b. The Study of Revolution: Communist Political Thought—Marx to Mao

See Politics 163bR for description.

Mr. Grow

HISTORY OF IDEAS 191b. The Comparative Study of Fascism

See Politics 165b for description.

Miss Wasserspring

HISTORY OF IDEAS 192a. Political Thought from Plato to Machiavelli

See Politics 182a for description.

Mr. Kelly

HISTORY OF IDEAS 193b. Political Philosophy of the Enlightenment

See Politics 186b for description.

Mr. Hulliung

HISTORY OF IDEAS 194bR. Contemporary Political Theory

See Politics 191bR for description.

Mr. Kelly

HISTORY OF IDEAS 195a. Theories of Political Sociology

See Politics 193a for description.

Mr. Hulliung

HISTORY OF IDEAS 203a. Greek Philosophical Thought: The "Nomos" "Physis" Controversy (Seminar)

A study of selected readings from fifth century B.C. sophistic, rhetorical, medical, historical and philosophical literature on the subject of the "nature of man" and his relationship to the *polis*. The seminar will endeavor to clarify the classical view of the tyrant and the characteristics of the statesman.

Mr. Diamandopoulos

HISTORY OF IDEAS 203b. Seminar in Rationalism: Spinoza's Political Treatises

See Philosophy 203b for description.

Mr. Diamandopoulos

*HISTORY OF IDEAS 205a. The Evolution of Marx's Thought, 1842-1883

A detailed examination of the several phases in Marx's intellectual development, with special emphasis on the concepts of class and revolution.

HISTORY OF IDEAS 212a. Seminar in Religion: The Search for Transcendence

An attempt to look at a number of non-theological types (Marcuse, Bloch, Laing and Jung) to discover what relevancy their concepts of transcendence may have for biblical thought.

Mr. Johnson

HISTORY OF IDEAS 213b. Seminar in Religion: American Theology and Literature in the Later Nineteenth Century

Readings of a selected number of American theologians of the 19th century, with reference to related literary works, including several of the following: Hawthorne, Melville, Twain, Howells, Crane and Dreiser.

Mr. Johnson

HISTORY OF IDEAS 241a. Topics in Twentieth Century Intellectual History

A reading of Heidegger's *Being and Time* and an analysis of his concept of authenticity in relation to historical action generally and Heidegger's politics in particular.

Mr. Izenberg

HISTORY OF IDEAS 247b. Modern Jewish Intellectual History since 1870

See NEJS 266b for description.

Mr. Halpern

HISTORY OF IDEAS 400-407. Dissertation Research

Independent research for the Ph.D. degree.

400. Mr. Aiken

404. Mr. Black

401. Mr. Altmann

405. Mr. Diamandopoulos

402. Mr. Berkowitz

406. Mr. Halpern

403. Mr. Binion

407. Mr. Izenberg

History of Ideas Colloquium

The History of Ideas Colloquium meets monthly to hear and discuss papers and reports presented by members of the faculty and visitors.

Attendance is required of all students.

* Not to be given in 1972-73.



Joint Program of Literary Studies

Classics, Comparative Literature, French, German, Russian and Spanish.

Objectives

The joint program of literary studies will accept students who declare themselves for the Ph.D. degree in the areas listed above. Interdisciplinary in design, the program aims to train literary scholars and teachers whose professional capabilities will be broader than their individual specialties. Students will have the opportunity to study aesthetic theory, methodology, literature and the sister arts. A small and carefully selected student body will work closely with the faculty of the program and with one another in a core curriculum before specializing. Each student is encouraged to plan an individual program of studies within his interests in consultation with his adviser(s). The program offers a variety of means for students to augment their specialties by study in related areas, such as Philosophy, Art, Music.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this program. Applications must be received no later than March 1. Please be sure to mark clearly the *area* of your choice on the application form. Each applicant must submit at least *one* college-level essay on a literary subject (which may be written in English) as a sample of work.

Faculty

Committee:

Professor EDWARD ENGELBERG, *Chairman* (Comparative Literature)

Professor DENAH LIDA (Spanish)

Professor MURRAY SACHS (French)

Professor HARRY ZOHN (German)

Professor DAVID WIESEN (Classics)

Associate Professor ROBERT SZULKIN (Russian)

In addition, faculty members of the Departments of Romance Languages and Comparative Literature, Germanic and Slavic Languages, Classics, English and American Literature, Philosophy, and Near Eastern and Judaic Studies are associated with the program.

Degree Requirements

Master of Arts

Only doctoral candidates will be accepted into the program. In special cases the Master of Arts degree may be awarded to students who have (1) satisfactorily completed one year of full-time study, (2) demonstrated research proficiency in one foreign language, (3) passed the written and oral qualifying examination, and (4) submitted an acceptable master's essay.

Doctor of Philosophy

Program of Study. Individual programs of study will be arranged between the student and his adviser. However, all students will be required to take a one year seminar in History and Theory of Literary Criticism, as well as a minimum of three half-courses in the "100" series. In addition, students will elect tutorials (Readings in Area Studies) and directed research in consultation with their adviser(s).

Language Requirements. Competence adequate for research in two foreign languages other than those of the student's major field will be required of each candidate in this program. A candidate may propose any two languages. However, in all cases the candidate must demonstrate to the area concerned the research value of the languages chosen for his field of interest. Candidates are expected to be certified in at least one of the two foreign languages during the first year of residence.

Qualifying Examination. During the spring term of his first year in residence, each candidate will take a Qualifying Examination to demonstrate his ability to analyze literary texts. In consultation with his faculty adviser, the

candidate will select two texts in his field of interest, one prose and one verse. He will prepare a written analysis of one text, and present an analysis of the other text orally to a committee of three faculty members.

Admission to Candidacy. Candidates will be admitted to candidacy for the Ph.D. degree when the residence and language requirements have been met, the Qualifying Examinations have been passed successfully, and a prospectus of the candidate's proposed dissertation topic has been approved by a committee of the area concerned.

Dissertation and Defense. The completed dissertation must be read and found acceptable by its director and two other readers before the candidate is eligible for the Final Oral Examination. The Final Oral Examination will be conducted by a committee of not less than four, one of whom must come from outside the candidate's area.

Teaching. All students in the program are expected to do some supervised teaching, either as a teaching assistant or by means of other arrangements which may vary from area to area.

Courses of Instruction

LITERARY STUDIES 201a. History and Theory of Criticism: From Plato to Dr. Johnson *Mr. Cunningham*

LITERARY STUDIES 201b. History and Theory of Criticism: The Development of Modern Critical Theories from Neo-Classicism to Symbolism and Realism *Mr. Engelberg*

LITERARY STUDIES 202a. Modes of Fiction: History and Theory *Mr. Sachs*

LITERARY STUDIES 300-305. Readings in Area Studies: Tutorials
300a and b. Classics. Readings in Latin and Hellenic Texts *Mr. Wiesen and Staff*

301a and b. Comparative Literature. Readings in Comparative Texts *Mr. Engelberg and Staff*

302a and b. French. Readings in French Texts *Mr. Sachs and Staff*

303a and b. German. Readings in German Texts *Mr. Zohn and Staff*

304a and b. Russian. Readings in Russian Texts *Mr. Szulkin and Staff*

305a and b. Spanish. Readings in Spanish Texts *Mrs. Lida and Staff*

LITERARY STUDIES 350-355. Directed Research

Open to advanced graduate students with the consent of the instructor and the Chairman of the Literary Studies Program.

350a and b. Classics
 351a and b. Comparative Literature
 352a and b. French
 353a and b. German
 354a and b. Russian
 355a and b. Spanish

Mr. Wiesen and Staff
Mr. Engelberg and Staff
Mr. Sachs and Staff
Mr. Zohn and Staff
Mr. Szulkin and Staff
Mrs. Lida and Staff

LITERARY STUDIES 400. Dissertation Research

Staff

In addition to those named above, the following faculty members are associated with this program. Messrs. Leonard Muellner, Douglas J. Stewart (Classics); Messrs. Milton Hindus, Philip Rahv, Peter Swiggart, John Wight, Miss Aileen Ward (English and American Literature); Mr. Stephen J. Gendzier, Misses Mordeca Jane Pollock, Judith Rice Rothschild (French); Messrs. William J. Cloonan, John Heckman, Peter Varkonyi (French and Comparative Literature); Messrs. Eberhard Frey, Lee Stavenhagen, (German); Mr. Richard C. Lansing (Italian and Comparative Literature); Mr. Naftali C. Brandwein (Near Eastern and Judaic Studies); Mr. Morris Weitz (Philosophy); Miss Margaret Dalton, Mr. David Hanson (Russian); Miss Andree Collard (Spanish); Mr. Luis Yglesias (Spanish and Comparative Literature).

Mathematics

Objectives

The graduate program in mathematics is designed primarily to lead to the Doctor of Philosophy degree. The formal course work is devoted to giving the student a broad foundation for work in modern pure mathematics. An essential part of the program consists of seminars on a variety of topics of current interest in which mathematicians from Greater Boston often participate. In addition, the Brandeis-Harvard-M.I.T. Mathematics Colloquium gives the student an opportunity to hear the current work of eminent mathematicians from all over the world.

Admission

The general requirements for admission to graduate work in mathematics are the same as those for the Graduate School as a whole. The department has available a variety of fellowships and scholarships for well qualified students. To be considered for such financial support the student should submit application by February 1.

Faculty

Professor HAROLD LEVINE, *Chairman*: Differential Topology and Singularities of Differentiable Maps.

Professor MAURICE AUSLANDER: Commutative and Homological Algebra.

Professor EDGAR H. BROWN, JR.: Algebraic Topology and Differential Topology.

Professor DAVID A. BUCHSBAUM: Algebra and Homological Algebra.

*Professor JEROME LEVINE: Differential Topology, Knot Theory.

Professor TERUHISA MATSUSAKA: Algebraic Geometry.

Professor ALAN MAYER: Algebraic Geometry.

Professor PAUL MONSKY: Algebraic Geometry.

Professor RICHARD S. PALAIS: Differential Topology and Global Analysis.

Professor HUGO ROSSI: Functional Analysis, Complex Geometry, Several Complex Variables.

*Professor ROBERT T. SEELEY: Singular Integrals. Partial Differential Equations.

***Associate Professor DAVID LIEBERMAN: Algebraic Geometry. Several Complex Variables.

Assistant Professor ROBERT AZENCOTT: Analysis.

**Assistant Professor DAVID EISENBUD: Algebra and Ring Theory.

Visiting Assistant Professor WILLIAM GUSTAFSON: Algebra.

Assistant Professor STAVROS PAPASTAVRIDIS: Algebraic Topology.

Instructor EDWARD WILSON

Visiting Research Fellow IDUN REITEN

Degree Requirements

Master of Arts

1. One year's residence as a full-time student.
2. Successful completion of an approved schedule of courses.
3. Satisfactory performance on the General Examination which is normally taken by all degree students at the end of their first year.
4. Proficiency in reading French, German, or Russian.

Doctor of Philosophy

1. Residence as a full-time student for two years.
2. Successful completion of an approved schedule of courses.
3. Superior performance in the General Examination and Qualifying Examination.
4. Doctoral dissertation approved by the department.
5. Final examination consisting of the defense of dissertation.
6. Proficiency in reading French and German, or Russian.

* On leave, 1972-73.

** On leave, Fall Term, 1972-73.

*** On leave, Spring Term, 1972-73.

Program of Study. The normal first year of study consists of Mathematics 101, 111, 121. The student may elect to substitute higher level courses for one or more of these on the basis of his preparation. He should discuss this possibility with the graduate adviser. The second year's work will normally consist of three higher level courses in addition to preparation for his qualifying examinations described below. Upon completion of the qualifying examinations, the student will choose a dissertation adviser and begin work on his thesis. This should be accompanied by advanced courses and seminars.

General Examination. The General Examination consists of three examinations in the fields of algebra, analysis and topology. These will usually coincide with the final examinations in Mathematics 101, 111 and 121 and must be taken at the end of the first year. In special cases alternative forms of examination might be arranged.

Qualifying Examination. The Qualifying Examination consists of two parts: a major examination and a minor examination. Both are normally taken in the latter part of the second year but may occasionally be postponed until early in the third year. For the major examination the student will choose a limited area of mathematics e.g., differential topology, or several complex variables, or ring theory—and a major examiner from among the faculty. Together they will plan a program of study and a subsequent examination in that material. The aim of this study is to prepare the student for research toward his Ph.D. The minor examination will be more limited in scope and less advanced in content. The procedures are similar to those for the major examination, but its subject matter should be significantly different.

Admission to Candidacy. To be admitted to candidacy for the Ph.D. degree in Mathematics, the student must have successfully completed his general and qualifying examination, must demonstrate proficiency in reading French, German or Russian and must be recommended for candidacy by the department.

Dissertation and Defense. The doctoral degree will be awarded only after the submission and acceptance of an approved dissertation and after the successful defense of that dissertation.

Courses of Instruction

The 100, 200, and 300 courses meet three hours per week for the entire year and are full courses.

MATHEMATICS 101a and b. Algebra I

Groups, rings, fields, Galois theory, representations and modules.

Mr. Auslander

MATHEMATICS 111a and b. Analysis I

Fundamental existence theorems for several real variables, manifolds and Riemann surfaces. *Mr. Palais*

MATHEMATICS 121a and b. Topology I

Set theory, topological spaces, function spaces and covering spaces. *Mr. Brown*

*MATHEMATICS 140. Real Analysis

*MATHEMATICS 141. Fourier Analysis

*MATHEMATICS 142. Introduction to Algebraic Geometry

MATHEMATICS 199a and b. Readings in Mathematics

Staff

MATHEMATICS 201a and b. Algebra II

Function fields and commutative rings.

Mr. Buchsbaum

*MATHEMATICS 202a and b. Algebraic Geometry I

Introduction to algebraic geometry.

*MATHEMATICS 204a and b. Homological Algebra I

Derived functors, spectral sequences.

*MATHEMATICS 207. Homological Methods in Commutative Ring Theory

MATHEMATICS 211. Analysis II

Advanced topics in analysis.

Mr. Rossi

*MATHEMATICS 212a and b. Functional Analysis

Locally convex spaces. Krein-Millman and Hahn-Banach theorems. Operators on Hilbert and Banach spaces. Banach algebras. Applications to Fourier series and other topics.

MATHEMATICS 221a and b. Algebraic Topology I

Homology theory and homotopy theory, including topics such as obstruction theory, the Serre spectral sequence, and the Steenrod algebra. *Mr. Papastavridis*

*MATHEMATICS 225. Automorphic Functions

MATHEMATICS 291. Algebra Seminar

Staff

MATHEMATICS 292. Analysis Seminar

Staff

MATHEMATICS 293. Topology Seminar

Staff

MATHEMATICS 299a and b. Readings in Mathematics

Staff

MATHEMATICS 302a and b. Algebraic Geometry II

Algebraic curves and abelian varieties.

Mr. Matsusaka

*MATHEMATICS 303. Algebraic Number Theory II

* Not to be given in 1972-73.

MATHEMATICS 307. Homological Methods in Commutative Ring Theory
A continuation of Mathematics 207. A study of ideals and modules of finite homological dimension through properties of their resolutions.

Messrs. Buchsbaum and Eisenbud

***MATHEMATICS 312a and b. Topics in Complex Variables**

***MATHEMATICS 320a and b. Introduction to the Mathematics of Quantum Field Theory and Elementary Particle Physics**

This course will treat basic topics in this area from a more mathematically sophisticated point of view than is customary, emphasizing group theoretic and algebraic ideas.

***MATHEMATICS 321a and b. Algebraic Topology II**

***MATHEMATICS 322a and b. Differential Topology**

A study of differentiable manifolds. Imbedding theorem, cobordism, Smale's handlebody theory and surgery.

***MATHEMATICS 324. Lie Groups**

***MATHEMATICS 333. Foundations of Global Analysis**

***MATHEMATICS 334. Differential Geometry and Infinite Dimensional Manifolds**

***MATHEMATICS 335. Non-Commutative Algebra**

MATHEMATICS 399a and b. Readings in Mathematics

Staff

MATHEMATICS 401–413. Research

Independent research for the Ph.D. degree.

- | | |
|--------------------|------------------------|
| 401. Mr. Auslander | 408. Mr. Palais |
| 402. Mr. Brown | 409. Mr. Rossi |
| 403. Mr. Buchsbaum | 410. Mr. Seeley |
| 404. Mr. H. Levine | 411. Mr. Mayer |
| 405. Mr. J. Levine | 412. Mr. Lieberman |
| 406. Mr. Matsusaka | 413. Mr. Papastavridis |
| 407. Mr. Monsky | |

* Not to be given in 1972–73.



Mediterranean Studies

Objectives

The graduate program in Mediterranean Studies aims at inducting the student into the investigation of major problems involving the meeting of different peoples in and around the Mediterranean Sea, where Western civilization was first created and then developed. The instruction will train the student to master the primary sources as he learns the broad synthesis. Master of Arts as well as Doctor of Philosophy candidates are expected to show a grasp of the problem as a whole, as well as the ability to work in a variety of different sources. Doctor of Philosophy candidates will be required to demonstrate also a capacity for original research.

The scope of the department embraces Mediterranean developments from Antiquity and down to, but not including, Modern Times. Students will be trained in history and archaeology as well as in the languages and literatures.

While it is desirable for the student to know as many of the key languages as possible in advance, no student is expected to come ideally equipped with complete linguistic preparation. If a course requires the use of a source that the student has not studied, he will ordinarily be permitted to enroll, provided that he is concurrently taking a basic language course to make up the deficiency.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area.

Students planning to enter this department should take as much Hebrew, Greek and Latin as possible during their undergraduate course of study. They should also make every effort to achieve a sight reading knowledge of French and German before embarking on graduate work.

Faculty

Professor CYRUS H. GORDON, *Chairman*: Cuneiform, Egypto-Semitic, and Mediterranean studies.

Professor ERNEST R. LACHEMAN: Cuneiform studies.

Associate Professor LOUIS V. ŽABKAR: Egyptian language and archaeology.

Assistant Professor GORDON D. NEWBY: The Islamic Mediterranean.

Assistant Professor IAN A. TODD: Mediterranean archaeology.

Degree Requirements

Master of Arts

Program of Study. Each candidate for the Master's degree is required to complete satisfactorily not less than twenty-four semester hours of course work in the department, plus any courses outside the department that the major professor may prescribe. The candidate must also show a command of either Latin or Greek, and of Hebrew or Arabic, plus at least one other Oriental language (such as Akkadian, Ugaritic, or Egyptian).

Language Requirement. A reading knowledge of one modern foreign language (ordinarily French or German) is required.

Qualifying Examinations. The student must demonstrate, in written and oral examinations, proficiency in the sources of two major areas of the program and an ability to synthesize them. A broad grasp of the Mediterranean origins of Western civilization will be required of all candidates, beyond the specific topics covered in courses.

Doctor of Philosophy

The requirements are the same as for the Master of Arts degree, plus twenty-four additional semester hours of course work in the department, a reading knowledge of two modern foreign languages (ordinarily French and German), and a doctoral dissertation.

Admission to Candidacy. A student shall be eligible for admission to candidacy upon completing his language requirements and satisfactorily passing his written and oral examinations. Proficiency in those examinations must be demonstrated in three major areas of the program.

Dissertation and Defense. The dissertation should be a significant and original contribution to scholarship and should demonstrate a capacity for independent research based on primary sources. After submission of the dissertation, the candidate will be expected to defend it in a final oral examination.

Courses of Instruction

MEDITERRANEAN STUDIES 100a. The Mediterranean in Antiquity

An orientation course covering the major historical developments that contributed to Western culture from the dawn of writing (ca. 3000 B.C.) to the appearance of Islam (7th century A.D.) The lectures will be supplemented by readings in ancient and modern historians.

Mr. Newby

MEDITERRANEAN STUDIES 100b. Introduction to the Islamic Mediterranean

The main developments from the Islamic Conquest to the Renaissance, stressing the interplay of European and Afro-Asiatic forces in the formation of the modern West. The lectures will be supplemented by readings in medieval and modern historians.

Mr. Newby

MEDITERRANEAN STUDIES 101. Mediterranean Civilization and Its Influence on the Outside World

Colloquia on the latest developments concerning the ancient Mediterranean as a creative cultural center.

Students may repeat MS 101 for credit because the subject matter will change from year to year.

Mr. Gordon

*MEDITERRANEAN STUDIES 108a. Literary History of the Mediterranean

An examination of the culture of the ancient Mediterranean through its literatures in translation. Texts will be supplemented with readings from various modern authors and historians.

MEDITERRANEAN STUDIES 109a. Cultural History of Mesopotamia

The institutions, daily life and material culture of Sumer, Babylonia and Assyria.

Mr. Lacheman

MEDITERRANEAN STUDIES 109b. Mesopotamia and Canaan

A study of the influence exerted by Mesopotamia on the West with special reference to Old Testament problems.

While there are no specific prerequisites, it is desirable for the student to have a knowledge of Biblical Hebrew and the content of MS 109a.

Mr. Lacheman

MEDITERRANEAN STUDIES 110. The Early Prehistoric Archaeology of the Near and Middle East

A detailed examination of archaeological sites and artifacts from the 10th through the 6th millennia B.C.

Prerequisite: One of the following courses: MS 112, 115, 116 or 117, or permission of the instructor.

Mr. Todd

MEDITERRANEAN STUDIES 111. The Archaeology of Syria-Palestine

An introduction to the archaeology of Syria-Palestine from the 10th millennium B.C. through the Late Bronze Age.

Mr. Todd

MEDITERRANEAN STUDIES 112. The Archaeology of the East Mediterranean

A general survey from the earliest periods to the end of the Late Bronze Age. This course will be conducted in a way to prepare students for field work as members of archaeological expeditions.

Mr. Todd

*MEDITERRANEAN STUDIES 114a. Archaeology of the New Kingdom Egypt

In this course the art and architecture of the New Kingdom will be surveyed with an emphasis on the temples and tombs of the Theban area.

*MEDITERRANEAN STUDIES 116a. Archaeology of Cyprus

Archaeology of Cyprus from the aceramic Neolithic period through the Late Bronze Age.

*MEDITERRANEAN STUDIES 116b. Archaeology of the Aegean

Archaeology of the Aegean from the aceramic Neolithic period through the Late Bronze Age.

*MEDITERRANEAN STUDIES 117. Archaeology of Mesopotamia and Iran
The Neolithic and Bronze Ages.

*MEDITERRANEAN STUDIES 123. Biblical Texts Pertaining to the Monarchy

*MEDITERRANEAN STUDIES 124a. Aramaic

Aramaic Incantation Bowls will be read and interpreted so as to bring out the role of magic in Talmudic Babylonia.

Prerequisite: A knowledge of Biblical Aramaic, or the Targumim or Syriac.

*MEDITERRANEAN STUDIES 124b. Mandaic

Magic Bowls of the Mandeans from Iraq and Iran will be read and discussed with a view to understanding gnostic and various pagan elements in late antiquity.

Prerequisite: Mediterranean Studies 124a.

MEDITERRANEAN STUDIES 125. Classical Arabic Texts

This course is designed to induct the student into the use of Classical Arabic texts for historical studies.

Open to students beginning Arabic but also recommended for those with some previous knowledge of the language who need a methodical review. *Mr. Newby*

MEDITERRANEAN STUDIES 130. Elementary Akkadian

A study of Ungnad's Grammar and readings of selected texts in cuneiform.

Mr. Lacheman

*MEDITERRANEAN STUDIES 136. Hittite

Grammar and interpretations of legal and ritual texts.

Prerequisite: The student must have taken or take concurrently Mediterranean Studies 130.

MEDITERRANEAN STUDIES 138. Elementary Ugaritic

Grammar and poetic texts in C. H. Gordon's *Ugaritic Textbook*, 1967, will be read with constant reference to biblical and classical literature.

Students may take this course for credit more than once since the tablets read in class will not repeat those studied in former years.

Prerequisite: A knowledge of Biblical Hebrew.

Mr. Gordon

*MEDITERRANEAN STUDIES 139. Advanced Ugaritic

MEDITERRANEAN STUDIES 140. Elementary Egyptian

A study of Middle Egyptian based on Gardiner's and other grammars. The principal texts to be read will be those included in Sethe's *Lesestücke* and de Buck's *Readingbook*. In the second semester some Middle Egyptian hieratic will be read.
Mr. Žabkar

*MEDITERRANEAN STUDIES 141. Late Egyptian Stories

The hieroglyphic texts of *The Misadventures of Wenamon* and *Horus and Seth* will be read with emphasis on grammar and basic interpretation.

MEDITERRANEAN STUDIES 152a. Greek Cultural Historians

In 1972-73 the Greek text of Plutarch's *De Iside et Osiride* will be read and interpreted in the light of recent studies of Egyptian religion.

Prerequisite: A knowledge of Greek.

Mr. Žabkar

*MEDITERRANEAN STUDIES 152b. Greek Historians

Book I of Diodorus of Sicily will be read and discussed in the light of Egyptian archaeological and historical records.

Prerequisites: A knowledge of Greek.

*MEDITERRANEAN STUDIES 153. The Minoans and Mycenaeans

Seminar discussions will be based on readings of ancient Bronze Age texts including Linear A and B.

Prerequisites: A reading knowledge of Hebrew and Greek.

*MEDITERRANEAN STUDIES 161b. Lucius Septimius

Dictys Cretensis will be read with reference to the light it sheds on the Epic Cycle and on the problem of Eteocretan.

Prerequisite: A knowledge of Latin.

MEDITERRANEAN STUDIES 162b. Meroe and Rome

A survey of the Meroitic civilization and its relations with Rome based on archaeological evidence and reports of Greek and Roman writers.

Mr. Žabkar

*MEDITERRANEAN STUDIES 217. Archaeological Seminar

Archaeological techniques, methods and problems designed for graduate students who expect to be associated with expeditions or who will have to work with excavated material; emphasis will be placed on Near Eastern archaeology but methods and problems of archaeology in other regions will be included. The subjects covered include techniques of field survey and excavation, surveying, photography, treatment and publication of material, the application of scientific techniques to archaeology, etc.

*MEDITERRANEAN STUDIES 225. The Qur'an and its Commentaries

Selected readings from the Qur'an and various commentaries. Attention will be given to both traditional and modern Qur'anic exegesis.

Open to students with a reading knowledge of Classical Arabic or by permission of the instructor.

* Not to be given in 1972-73.

*MEDITERRANEAN STUDIES 226. Advanced Arabic

Selected readings from *The Arabian Nights* with special reference to literary, philological and geographical content.

MEDITERRANEAN STUDIES 227a. Seminar in Advanced Arabic Prose

A seminar in the development of Arabic prose style concentrating on 'adab literature.

Prerequisite: MS 125 or permission of the instructor.

Mr. Newby

MEDITERRANEAN STUDIES 227b. Seminar in Arabic Poetry

A seminar in the development and nature of Arabic poetics and its place in Arab history.

Prerequisite: MS 125 or permission of the instructor.

Mr. Newby

*MEDITERRANEAN STUDIES 233b. Akkadian Texts from the West

MEDITERRANEAN STUDIES 234. Akkadian Contracts, Letters and Diplomatic Texts

Cuneiform texts will be read with analysis of dialect, style and historic significance.

Prerequisite: MS 130.

Mr. Lacheman

*MEDITERRANEAN STUDIES 235. Sumerian

Grammar and reading of cuneiform texts.

Prerequisite: Students must be taking or have passed MS 130.

° Not to be given in 1972-73.



*MEDITERRANEAN STUDIES 241a. Historical Inscriptions of the 18th Dynasty

Historically significant inscriptions of the 18th Dynasty will be read from *Urkunden* and correlated with the political and cultural history of the New Kingdom.

Prerequisite: MS 140.

*MEDITERRANEAN STUDIES 241b. Hieroglyphic Inscriptions of the Ptolemaic-Roman Period

The inscriptions dealing with the myth of the "divine birth" and the "divine nature" of the pharaoh recorded on the Ptolemaic-Roman temples will be read in this course.

Prerequisite: MS 140.

*MEDITERRANEAN STUDIES 242. Advanced Late Egyptian

Texts of the Ramesside Period will be analyzed in historical and archaeological context.

Prerequisite: MS 140.

MEDITERRANEAN STUDIES 243. Advanced Egyptian

Selected Spells from Pyramid Texts, Coffin Texts, and Book of the Dead will be read, using whenever possible the diachronic method.

Prerequisite: MS 140.

Mr. Žabkar

*MEDITERRANEAN STUDIES 244. Coptic

MEDITERRANEAN STUDIES 300a and b–304a and b. Directed Readings in Mediterranean Studies

300a and b. Mr. Gordon

303a and b. Mr. Newby

301a and b. Mr. Žabkar

304a and b. Mr. Todd

302a and b. Mr. Lacheman

MEDITERRANEAN STUDIES 400–405. Dissertation Research

Independent research for the Ph.D. degree.

400. Mr. Gordon

403. Mr. Newby

401. Mr. Žabkar

404. Mr. Todd

402. Mr. Lacheman

Music

Objectives

The graduate program in Music, leading to the degrees of Master of Fine Arts and Doctor of Philosophy, is designed to provide a command of the craft of composition and an understanding of the nature, structural basis, and historical development of music.

* Not to be given in 1972–73.

Three general fields of study are offered in music:

1. *Musical Composition*. This program leads to the degree of Master of Fine Arts.

2. *Musical Composition and Theory*. This program leads to the degrees of Master of Fine Arts and Doctor of Philosophy.

3. *History of Music*. This program leads to the degrees of Master of Fine Arts and Doctor of Philosophy.

Students must specialize in one of these areas but are expected to acquire a background in all three.

Admission

Only a limited number of students will be accepted. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

Applicants for study in Musical Composition or Musical Theory are required to submit, in addition to a transcript of their undergraduate records, evidence of qualification in the form of examples of original work in musical composition and advanced work in musical theory. Applicants for admission in the History of Music should submit examples of their prose writing on music as evidence of their ability to handle the language and specialized vocabulary. Undergraduate theses or term papers will be satisfactory. This work should be submitted together with the formal Application for Admission.

All applicants are expected to have some proficiency at the piano or on an orchestral instrument. Information about this should be furnished when making formal application. A departmental written test in basic musicianship and analysis will be sent to all applicants; answers are to be submitted by mail on or before March 15.

Admission is granted for one academic year at a time. Students in residence must make formal application for readmission to the department between March 1 and March 15. Readmission will be refused in cases where students have not demonstrated a capacity for acceptable graduate work.

Faculty

Professor ROBERT L. KOFF, *Chairman*; Professors ARTHUR BERGER, HAROLD SHAPERO, SEYMOUR SHIFRIN; Associate Professors MARTIN BOYKAN, PAUL H. BRAINARD, CALDWELL TITCOMB, LEO TREITLER; Assistant Professors LOUIS S. BAGGER, EDWARD COHEN, JOSHUA RIFKIN, DAVID ROSEN; Lecturer JAMES OLESON; Consultants MAYNARD GOLDMAN, FRED GOLDSTEIN, MARYLOU SPEAKER.

Degree Requirements

Master of Fine Arts

Language Requirements.

Group A: French, German, Italian.

Group B: Spanish, Latin, Hebrew, Greek (and other languages at the discretion of the Music faculty).

A reading knowledge of a language from Group A is normally required of all applicants for admission to a graduate program in music.

Candidates for the Master's degree specializing in Musical Composition must possess a reading knowledge of two of the above languages, of which at least one must be from Group A. (The combination of Italian and Spanish will not be approved).

Candidates for the Master's degree specializing in Musical Theory or in History of Music must possess a reading knowledge of two languages in Group A.

Foreign language course credits will not in themselves constitute fulfillment of the language requirements for advanced degrees. All candidates must pass language examinations set or approved by the Music faculty and offered periodically during the academic year. Students are urged to take these examinations at the earliest feasible date. In case of failure, an examination may be taken more than once.

Instrumental Proficiency. At least moderate proficiency at the piano is required of all candidates for advanced degrees.

Residence Requirements. Six full courses or the equivalent in half-courses at the graduate level, completed with distinction, and a thesis are required of all candidates.

The department normally allows credit for no more than one full course taken at another institution.

In general, the program of course work is completed in two academic years. It is suggested that students pursue no more than three full courses in any one year.

Examinations. Early in March of their first year of study, graduate students will be expected to take an examination in the standard literature of music from the early eighteenth century to the present. In cases of failure, examinations may be repeated.

Before the end of their second year of study, candidates for the degree of Master of Fine Arts must pass with distinction written general examinations in theory and history, one of which will be their major field, the other their minor field.

Thesis. Candidates for the degree of Master of Fine Arts in Music are required to submit a thesis. For candidates in Musical Composition this will consist of a musical composition, its scope to be approved by the Music faculty. For candidates in the History of Music or in Musical Theory and Composition it will be an analytical or historical study on a topic acceptable to the Music faculty. Part of this requirement in Musical Theory and Composition may be met by an original musical composition. Candidates in the History of Music may submit, in lieu of a separate thesis, revised copies of two seminar papers that have been certified by the seminar instructor and at least one other faculty member as demonstrating a high degree of competence in research and writing. Two copies of the thesis or composition must be submitted to the department chairman in final form no later than December 1 for a February degree or April 1 for a June degree.

Doctor of Philosophy

Residence Requirements. A minimum of eight full courses or the equivalent in half-courses at the graduate level, completed with distinction, are required of all candidates.

In general, the program of course work will be completed in three academic years.

Applicants who have done graduate work elsewhere may apply for transfer of credit for such work; a maximum of one year of residence may be granted.

Instrumental Proficiency. At least moderate proficiency at the piano is required of all candidates.

Language Requirements. Candidates for the Doctor's degree in Music must possess a reading knowledge of all three languages in Group A. In exceptional cases, the Music faculty may accept a language in Group B in lieu of Italian. Subject to the approval of the department, candidates in theory or composition may substitute for the third language courses in Mathematics, Physics, Philosophy or other disciplines.

Examinations. Candidates will be expected to pass with unusual distinction the written general examination for the M.F.A. After meeting their language and residence requirements they must pass the special oral qualifying examination.

Admission to Candidacy. Students will be admitted to candidacy for the Ph.D. degree upon successful completion of the written and oral qualifying examinations, fulfillment of the language requirements, and the approval of a dissertation topic.

Dissertation. Candidates for the degree of Doctor of Philosophy in the History of Music or in Musical Theory and Composition must submit an acceptable written dissertation on a subject approved by the Music faculty. In certain cases, with the prior approval of the department, qualified candidates for the degree in Theory and Composition may meet a part of the dissertation requirement with an original composition. Two copies of the doctoral dissertation, as well as an abstract of the dissertation not to exceed six hundred words in length, should be submitted to the department or committee chairman no later than December 1 for a February degree and April 1 for a June degree of the academic year in which the Ph.D. degree is to be conferred.

Written dissertations should demonstrate the competence of the candidate as an independent investigator, his critical ability, and his effectiveness of expression. Upon completion of the dissertation the candidate will be expected to defend it in an oral examination.

Courses of Instruction

Except in the rarest circumstances, graduate credit is not allowed for courses numbered below Music 165.

MUSIC 165b. Elementary Orchestration

The instruments of the orchestra; their construction, ranges and playing techniques, with a consideration of their use by major composers; the methods of writing effectively for present-day instruments, individually and in combination; the mechanics of reading and writing a score.

Written exercises, analysis of scores, study of recorded performances and live demonstrations. *Mr. Titcomb*

MUSIC 168a. Renaissance and Baroque Keyboard Music

A survey of the literature for harpsichord and clavichord, including detailed study of the historical evolution of those instruments.

Given in alternate years.

Mr. Bagger

*MUSIC 171a. History and Practice of Music Criticism

An examination of music criticism from the Baroque to the present day, with special attention to important nineteenth and twentieth century critics. Practical experience through the regular writing of reviews.

Prerequisite: A knowledge of music history and theory.

MUSIC 180b. Ethnomusicology

An introduction to the music of nonliterate peoples; to folk music, including that of the American Negro; and to the music of non-Western high cultures; with particular emphasis on India and Japan.

Prerequisite: Music 162 (or the equivalent) or a course in anthropology.

Given in alternate years.

Mr. Titcomb

* Not to be given in 1972-73.



*MUSIC 194b. Problems in Cultural Historiography

Readings and discussions concerning the conceptual foundations of historical study in the arts: the relation between history and criticism; the history and function of style-period concepts; evolutionary and developmental theories; modes of explanation in cultural history.

Prerequisite: Permission of instructor.

MUSIC 197aR. Tutorial in Music History and Literature

Guided reading and research in the history and literature of music.

Mr. Boykan

MUSIC 197bR. Tutorial in Musical Analysis

Basic analytical problems of the music of the twentieth century, approached through detailed study of a few representative works.

Mr. Shifrin

MUSIC COLLOQUIUM

Discussions of special topics led by the faculty and occasional guests. Some of the sessions will include performances of new works. Required of all graduate students. *Non-credit.*

Staff and Visiting Lecturers

MUSIC 200. Proseminar in Musicology

A survey of the principal subject matters, problems, and techniques comprising the discipline of Musicology.

Messrs. Brainard (Fall Term) and Rifkin

*MUSIC 203a. Advanced Musical Analysis

Special analytic problems of structural interpretation with emphasis on total form and intrinsic relations. Intensive and detailed analysis of scores in terms of such considerations as the premises of the tonal system, Schenker's concept of musical unity, serial organization. Questions of methodology and terminology raised by the "new theory."

MUSIC 221. Seminar in the Music of the Middle Ages

Studies in the history of music from early Christian times through the end of the fourteenth century. *Mr. Treitler*

***MUSIC 222. Seminar in the Music of the Renaissance**

Studies in the history of music during the fifteenth and sixteenth centuries.

Music 221 and 222 will be offered in alternate years and both will incorporate systematic studies in the musical notations of their respective times.

MUSIC 223. Seminar in Baroque Music

Studies in historical developments in music of the seventeenth and eighteenth centuries. Typical full-year projects will include: the cantatas of J. S. Bach; seventeenth century keyboard music; history of cantata and oratorio in the seventeenth century; sonata, suite, concerto; Baroque opera.

Messrs. Rifkin (Fall Term) and Brainard

***MUSIC 224. Seminar in Pre-Classical and Classical Music**

Study of historical problems in the music of the middle and late eighteenth century.

Given in alternate years.

MUSIC 225. Seminar in Romantic Music

Selected topics in music from Beethoven, Weber, and Schubert to Strauss, Mahler, and Sibelius. Some consideration will be given to Impressionism and to the relations between music and the other arts.

Mr. Rosen

MUSIC 226. History of Western Music Theory

A review of the recurring themes and issues of Western music-theoretical literature, from classical times to the end of the age of tonality. Selected writings will be studied in depth.

Messrs. Rifkin (Fall Term) and Berger

MUSIC 227. Proseminar in Theory and Composition

Technical projects in theory and composition; tonal forms and contrapuntal techniques.

Required of all first-year graduate students in theory and composition except under special circumstances. May be repeated for credit with permission of the instructor.

Messrs. Cohen (Fall Term) and Shapiro

***MUSIC 228. Seminar in Twentieth Century Techniques**

Exercises in composition employing musical materials and organizational methods developed since about 1900, accompanied by analysis of works of composers from Debussy to the present.

MUSIC 233b. Topics in Analysis

Mr. Shifrin

MUSIC 246a. Stravinsky

Mr. Berger

MUSIC 265a. Advanced Orchestration

Mr. Boykan

MUSIC 270. Seminar in Serial Music

Detailed analysis of scores by Schoenberg, Webern, Boulez, Babbitt; methods of serial organization; relationship between serial procedures and general compositional problems such as phrase articulation and "harmonic movement."

Mr. Boykan

MUSIC 292. Seminar in Composition

Group meetings and individual conferences. Opportunities for the performance of student works will be provided.

Messrs. Berger, Boykan, Shapero and Shifrin

MUSIC 295a. Electronic Music

Composition, notation and recording of electronic music. Technical electronics as they apply to musical problems.

Mr. Shapero

MUSIC 299a and b. Individual Research and Advanced Work

Individual research and advanced work in musical literature, musical history and in special problems of musical analysis, esthetics, theory and criticism.

Staff

MUSIC 400-410. Dissertation Research

Required of all doctoral candidates.

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|--------------------------|--------------------------|
| 400. <i>Mr. Berger</i> | 406. <i>Mr. Treitler</i> |
| 401. <i>Mr. Boykan</i> | 407. <i>Mr. Bagger</i> |
| 402. <i>Mr. Brainard</i> | 408. <i>Mr. Cohen</i> |
| 403. <i>Mr. Shapero</i> | 409. <i>Mr. Rifkin</i> |
| 404. <i>Mr. Shifrin</i> | 410. <i>Mr. Rosen</i> |
| 405. <i>Mr. Titcomb</i> | |

Electronic Music Studios

Two studios with facilities for the composition of electronic music are available to qualified student composers.

Director: Mr. Shapero

Near Eastern and Judaic Studies**Objectives**

The graduate program in Near Eastern and Judaic Studies, leading to the Master of Arts and Doctor of Philosophy degrees, is designed to train scholars and teachers in the various cultures of the Near East and of the classical and modern Judaic civilization, and to do further research in these areas. This work is done mainly through study of the relevant languages and literatures and interpretation of historical sources.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this department.

Faculty

- Professor NAHUM M. SARNA, *Chairman*; Biblical studies. Dead Sea Scrolls.
Professor ALEXANDER ALTMANN: History of Jewish philosophy and mysticism. Medieval philosophy. Classical Bible commentaries.
Professor NAFTALI C. BRANDWEIN: Modern Hebrew literature.
Professor NAHUM NORBERT GLATZER: Jewish history. Literature of the Second Commonwealth. Hebrew historiography. Eschatology.
Professor BENJAMIN HALPERN: Modern Near East history. Political and social history of Palestine and Israel. Modern Jewish history.
Professor MARSHALL SKLARE: Sociology of the Jewish community.
Associate Professor LEON JICK: Contemporary Jewish history.
Associate Professor DWIGHT W. YOUNG: Semitic languages and civilizations.

Program of Study

Among the main fields in the area of Near Eastern and Judaic Studies in which courses are being given in the Graduate School are:

- Semitic Languages and Literatures (Akkadian, Arabic, Aramaic, Egyptian, Hebrew, Syriac).
- History of Ancient Near East.
- Islamic Studies.
- Biblical Studies.
- Jewish History.
- Medieval Jewish Philosophy and Mysticism.
- The Modern Near East.
- Contemporary Jewish Studies.
- Fields of study not listed here may be approved.

Degree Requirements

Master of Arts

Residence Requirements. The student is required to complete four full courses in the department. Programs of study are kept flexible; the department will consider the needs and interests of each student and advise him in outlining a program of study—this program may be modified later by the department. Students may be required to take courses given by other departments. A student who can, on admission, give evidence of satisfactory com-

petence in one Semitic language or in one particular field of Near Eastern and Judaic Studies, will be able to complete the program for his degree in one year. Additional resident study may be required of less advanced students.

Language Requirements. Every candidate for the Master of Arts degree must show proficiency in one Semitic language, and in French or German. In special cases, another modern foreign language may be substituted for one of the two listed here. The foreign language requirements are to be satisfied by examination not later than eight weeks before a candidate is to receive his degree.

Examination. An oral examination is given at the conclusion of the student's residence. The examination is organized around two major subjects chosen from the fields of study undertaken by the student and is designed to test the student's knowledge in those subjects as well as his ability to relate his information to the large area to which those subjects belong. A student who fails to pass the examination, or any part of it, may apply for re-examination, which will take place not earlier than one semester after the date of the first examination.

Thesis. In certain cases, the student is advised to write a thesis which must be submitted no later than May 1 of the year in which the degree is to be conferred. In such cases, the student registers in the Dissertation Colloquium (NEJS 400) which then counts as one of the required four courses.

Doctor of Philosophy

Residence Requirement. The residence normally required of a Ph.D. student who is the holder of an M.A. degree is one year (four courses); a longer residence will be required for part-time students and students holding teaching assistantships. The main emphasis, however, is placed on the students' individual research.

Language Requirements. A candidate for the Doctor of Philosophy degree in this area must show proficiency in two Semitic languages and in two modern foreign languages, as required by his special field of research. The candidate must satisfy his language requirements no later than at the completion of his required residence in the Graduate School.

Examinations. A written or an oral comprehensive examination in three areas of study (the scope being determined at a conference with the examining board) is given at the conclusion of the student's residence. A student who fails to pass the examination, or any part of it, may apply for a re-examination, which will take place not earlier than one semester after the date of the first examination.

Admission to Candidacy. A student registered for studies leading to the Ph.D. degree becomes a candidate for that degree when he has fulfilled his residence requirements, when the subject and synopsis of his dissertation have been accepted by the department, when he has passed the comprehensive examinations, and fulfilled the language requirements.

Dissertation and Defense. The student will discuss his plans for a dissertation with the chairman of the department and the dissertation supervisor. The conferences on the planning and the program of the dissertation take place in the Dissertation Colloquium (NEJS 400), a course in which the candidate is to register. Normally, the candidate will continue working on his dissertation after the completion of his residence, i.e., as a nonresident student. The dissertation must demonstrate the candidate's thorough knowledge of the field and his competence in independent research, and must constitute an original contribution to knowledge. Two copies of the dissertation, one of which must be the original typescript, are to be deposited in the office of the department chairman not later than April 1 of the year in which the candidate plans to take the degree. A defense of the dissertation will be held.

Courses of Instruction

NEJS 101. Basic Arabic

An introduction to literary Arabic. Drills in grammar, pronunciation and composition. Reading of graded classical and modern texts.

Open to students who have not previously had instruction in Arabic.

Mr. Dankoff

NEJS 102. Intermediate Arabic

Study of advanced grammatical and syntactical forms. Reading of related classical and modern texts. Drills in pronunciation and composition.

Prerequisite: NEJS 101 or its equivalent.

Mr. Dankoff

NEJS 103. Introduction to Islamic Civilization and Institutions

A description of Islamic civilization and an examination of its institutions and their origins.

Mr. Dankoff

*NEJS 104b. Aramaic Dialectology: Biblical Aramaic

A study of the Aramaic portions of the Bible, and the contemporary Aramaic documents from Egypt with emphasis on grammar, and comparative and historical considerations.

NEJS 106. Elementary Ugaritic

See Mediterranean Studies 138.

Mr. Gordon

* Not to be given in 1972-73.

NEJS 107. Elementary Akkadian

See Mediterranean Studies 130.

Mr. Lacheman

NEJS 108b. Comparative Grammar of Semitic Languages

A study of phonology and morphology, utilizing pertinent Egyptian data, with special reference to problems in Biblical Hebrew.

Mr. Young

*NEJS 109a. The Patriarchal Narratives in the Light of Near Eastern Documents

NEJS 110b. Problems in Biblical History

An intensive examination of crucial periods in the history of ancient Israel. Extra-biblical materials will be correlated with selected classical Hebrew texts.

Prerequisite: A reading knowledge of Hebrew.*Mr. Young*

NEJS 111a. Priestly Literature

A critical and structural study of the priestly and cultic prescriptive texts in Exodus 25–Numbers 9. Attention will be given to institutions and archival techniques, as well as to the phenomena of sacred space and sacred time.

Mr. Fishbane

NEJS 112b. Second Isaiah

A study of the literature and theology of Isaiah of the Exile. His use and reuse of prophetic themes and attitudes will receive special attention.

Mr. Fishbane

NEJS 113. Targum

A study of selections from Targumic Literature including the newly discovered Palestinian materials. Critical study of the sources and their place among early Bible versions and exegesis.

Mr. Fishbane

*NEJS 114a. The Book of Amos

An intensive examination of textual and exegetical problems; the historical background; the leading ideas and concepts.

Prerequisite: Hebrew 10 or its equivalent.

*NEJS 116. Biblical Prophecy: The Book of Jeremiah

NEJS 117a. The Book of Job and the Problem of Evil

A reading of the Book of Job (in English translation) and a discussion of the role of the book in the literature and thought of the Western world; the problem of evil in Judaism and Christianity.

Mr. Glatzer

NEJS 118. The Book of Psalms

Selected readings. An examination of Hebrew and Near Eastern psalmody. A study of the leading religious concepts in the light of modern exegesis.

Mr. Sarna

NEJS 123b. Classical Biblical Commentaries II

Selected texts from the French and Spanish school of Jewish Commentators on the Prophets and Hagiographa.

Mr. Altmann

* Not to be given in 1972–73.



*NEJS 125b. Selected Texts from Genesis Rabba

NEJS 126b. The History of the Jews in Modern Times

The emancipation in France: the 19th century Jewish community. An examination of the community structure that emerged as a result of the emancipation and Napoleon's Sanhedrin; intellectual currents, ideologies and institutions.

Mrs. Albert

NEJS 135a. Medieval Jewish Philosophy: Maimonides' Guide to the Perplexed

A study of the principal chapters involving Maimonides' doctrine of the existence and attributes of God, and his discussion of the problem of creation.

Mr. Altmann

NEJS 136b. Jewish Philosophy in the Late Middle Ages and the Renaissance

Mr. Altmann

NEJS 137a. Hebrew Literature: Introduction to Medieval Hebrew Poetry

The Hebrew Golden Age of Spain from its inception through Shlomo ibn Gabirol; his work and that of Shmuel Hanagid will be stressed.

Prerequisite: Permission of the instructor.

Mr. Segal

NEJS 137b. Hebrew Literature: Introduction to Medieval Prose

Selected texts from maqamat, ethical wills, correspondence, historical and other writings.

Prerequisite: Ability to read Biblical narrative.

Mr. Segal

NEJS 138a. Modern Hebrew Literature: The Jew and his Realia

An analytical study in the development of themes, motifs, milieu, ideas and structure in Modern Hebrew prose and poetry, with emphasis on the Jew and his Realia as reflected in this literature. The course will be based on the short stories of I. D. Berkovitz, S. Y. Agnon and others in prose; and on D. Shimony, A. Gilboa and others in poetry.

Prerequisite: Hebrew 10 or the equivalent.

Mr. Brandwein

*NEJS 140a. History of the Jews in Antiquity and the Middle Ages

The organization and function of the Jewish community; intellectual developments and changes in religious doctrine; Messianic movements; the Jewish community in European economic life.

NEJS 145b. The Origins of Near Eastern Nationalism

The impact of Western models upon Egypt and Turkey and the background of Arab nationalism from 1800 to 1920. *Mr. Halpern*

NEJS 149a. History of Palestine and Contemporary Israel

The development of the Jewish community, the Jewish National Home, and the Jewish state from 1800 to 1956. Social structure, institutional development and political history. *Mr. Halpern*

NEJS 160a. The American Jewish Experience, 1654–1885

A survey of American Jewish history from the earliest settlement to the consolidation by the nineteenth century German Jewish immigrants of their social, economic and ideological patterns. *Mr. Jick*

NEJS 160b. The Emergence of the American Jewish Pattern, 1880 to the Present

The impact of mass immigration from Eastern Europe beginning in the 1880's. The emergence of the institutions, ideologies, life styles, and cultural norms which constitute the American Jewish pattern. *Mr. Jick*

*NEJS 163a. The Sociology of the American Jew

*NEJS 164b. The Sociology of the American Jewish Community

NEJS 165a. The European Jewish Community: History and Traditions

The structure of the traditional community from Roman to early modern times; comparative analysis of adjustment of Jewish minority to changing environment. *Mr. Halpern*

NEJS 166a. Modern Jewish Intellectual History to 1870

Jewish ideologies and movements from the Enlightenment to the rise of political anti-Semitism. *Mrs. Albert*

NEJS 166b. Modern Jewish Intellectual History since 1870

Jewish ideologies and movements from the rise of political anti-Semitism to the present. *Mrs. Albert*

NEJS 168a. The Culture of East European Jewry

A survey of social and ideological trends and an introduction to the literature and folklore of East European Jewry. *Mr. Goldsmith*

* Not to be given in 1972–73.

NEJS 169a. Modern Jewish History: The Destruction of European Jewry

This course will deal with the destruction of European Jewry by studying the Nazi anti-Semitic ideology, the world of the Nazi bureaucracy and the executioners; the internal life of the ghettos and the concentration camps, resistance and rescue. It will combine the manner of traditional historiography with the knowledge and insight supplied by the social sciences.

A knowledge of German, Yiddish or Hebrew is desirable but not essential.

Mrs. Ofer

NEJS 171b. Trends and Values in Yiddish Literature

A study (in English) of the major lines of development from the folk literature of the sixteenth century to the contemporary short story, novel, essay and poem.

Mr. Goldsmith

NEJS 172a. Seminar in Yiddish Literature: Mendele Mokher Seforim, Sholom Aleichem and Y. L. Peretz

Representative works of each author will be studied together with selected criticism.

Mr. Goldsmith

*NEJS 172b. Seminar in Yiddish Literature: The Works of H. Leivick

Leivick's dramas, poetry, essays and addresses against the background of modern Jewish history and the trends in 20th century Yiddish literature of Europe and America.

*NEJS 173a. Seminar in Yiddish Literature: American Yiddish Poetry

The leading figures and movements during the period from 1890 to 1940. Rosenfeld, Yehoash, Liessin, Reisen, M. L. Halpern and Mani Leib.

NEJS 173b. Seminar in Yiddish Literature: Contemporary Poetry

Among the poets whose work will be studied are Glatstein, Grade, Manger, J. I. Segal, Sutzkever and Zeitlin.

Mr. Goldsmith

NEJS 204a. Topics and Problems in Jewish Education

See CJS 204a for description.

Mr. Wachs

NEJS 204b. Conceptual Models for Jewish Education

See CJS 204b for description.

Mr. Wachs

NEJS 205a. Theory and Practice of Jewish Communal Service.

See CJS 205a for description.

Mr. Reisman

*NEJS 223b. The Dead Sea Scrolls: The Manual of Discipline

To be read in the original, with special attention to the historical background, religious teachings and social organization of the sect. Linguistic features will be emphasized. A seminar.

*NEJS 224. History of the Biblical Canon, Text and Ancient Versions

A study of the growth of the biblical text and the ancient versions of the Bible.

* Not to be given in 1972-73.

***NEJS 225b. North-West Semitic Inscriptions**

A seminar in Hebrew, Phoenician and Moabite inscriptions from the biblical period. The texts will be read in their original script. Special emphasis will be placed on linguistic, literary, religious and historical features.

NEJS 226. Biblical Texts in the Light of Ancient Near Eastern Civilization

A study of selected biblical passages against the background of cognate texts from the ancient world.

Prerequisite: A reading knowledge of Hebrew and Akkadian. *Mr. Young*

NEJS 235. Readings in Jewish Education

See CJS 235 for description.

Mr. Wachs

***NEJS 236b. Selected Texts from Jewish Mystical Literature**

The texts concerned are from the Hekalot, sefer Yezira, Bahir, the Gerona circle, the Zohar and the thirteenth century Kabbalists.

***NEJS 238b. A History of Ideas in Modern Hebrew Literature**

A seminar covering a history of ideas as reflected in the writings from the Enlightenment to the establishment of the state of Israel.

NEJS 239a. Conflict of Ideas in Modern Hebrew Literature

A critical study of the major streams and trends in Modern Hebrew poetry and prose, by means of analysis of structure, themes, ideas and milieu; with emphasis on parallel motifs in European literature. The course will be based mainly on the works of Micha Yosef Levensohn, Y. L. Gordon, H. N. Bialik and S. Tchernichovsky in poetry; and S. Y. Agnon and H. Hazaz in prose.

Mr. Brandwein

NEJS 249b. Contemporary Social Change in Israel

An intensive systematic study of change in the whole society, 1960–1966. Seminar, open, with approval of instructor, to students with the equivalent of NEJS 149a, or adequate background in political sociology or historical sociology.

Mr. Halpern

***NEJS 256a. The Second Jewish Commonwealth**

Source studies in the history and culture of Palestine from 538 B.C. to 70 A.D.

NEJS 258b. Studies in Eschatological Theories

Messianic and Apocalyptic concepts in the Old Testament prophets. Apocrypha and the Dead Sea writings in post-Biblical Judaism and early Christianity; Messianic movements in the Middle Ages.

Mr. Glatzer

***NEJS 266a. Topics in the History of the Jewish Enlightenment and Emancipation**

A seminar.

Prerequisites: NEJS 166a or its equivalent. Reading knowledge of Hebrew and German or French.

***NEJS 280a. Moses Mendelssohn and the Enlightenment**

Analysis of Mendelssohn's philosophy and of his interpretation of Judaism.

* Not to be given in 1972–73.

*NEJS 282a. The American Jew: The Sociological Literature

*NEJS 282b. Problems in the Sociology of the Jewish Community

NEJS 320–330. Reading Courses

Special tutorials for advanced graduate students.

320a and b. Readings in Jewish History *Mr. Glatzer*

322a and b. Readings in Medieval Jewish Philosophy *Mr. Altmann*

323a and b. Readings in Kabbala *Mr. Altmann*

324a and b. Readings in Modern Hebrew Literature *Mr. Brandwein*

325a and b. Readings in Biblical Texts *Mr. Sarna*

326a and b. Readings in Islamic Civilization *Mr. Dankoff*

327a and b. Readings in Ancient Near Eastern Civilization *Mr. Young*

329a and b. Readings in Modern Near East and Modern Jewish History *Mr. Halpern*

330a and b. Readings in the Sociology of the Jewish Community *Mr. Sklare*

NEJS 400–407. Dissertation Colloquium

Independent research for the Ph.D. degree.

400. *Mr. Altmann*

404. *Mr. Brandwein*

401. *Mr. Glatzer*

405. *Mr. Sarna*

402. *Mr. Halpern*

406. *Mr. Sklare*

403. *Mr. Young*

407. *Mr. Dankoff*

Philosophy

Objectives

The graduate program in philosophy is designed to prepare students for careers in philosophy as scholars and teachers. It places traditional emphasis on logic, epistemology, metaphysics, value theory and the history of philosophy. The number of students admitted to the program is small and the most important part of a student's work is done in small seminars and tutorials under close faculty supervision.

Admission

In addition to the general requirements for admission to the Graduate School as specified in an earlier section of this catalog, applicants for admission to the graduate program in philosophy should have had at least one year of history of philosophy and at least one course in logic.

* Not to be given in 1972–73.

Faculty

Professor PETER DIAMANDOPOULOS, *Chairman*: History of ancient philosophy. History of science.

**Professor HENRY D. AIKEN: Ethics. American philosophy. Social philosophy.

Professor FREDERIC T. SOMMERS: Philosophy of Language. Metaphysics. History of philosophy.

*Professor JOHN VAN HEIJENOORT: Logic. History of logic. Foundations of mathematics.

Professor MORRIS WEITZ: Philosophy of art and literature. Analytical philosophy.

Associate Professor ROBERT S. GREENBERG (*Student Adviser*): Theory of knowledge.

Assistant Professor RICHARD BURIAN: Philosophy of science.

Degree Requirements

All programs will be worked out in consultation with the student's adviser.

Master of Arts

Generally only candidates for the Ph.D. degree are accepted, although in some cases an M.A. degree will be awarded upon satisfactory completion of the following requirements:

1. One year's residence as a full-time student.
2. Successful completion of a prescribed schedule of courses.
3. Passing the qualifying examination.
4. Demonstration of proficiency in either French *or* German.

Doctor of Philosophy

The degree requirements for the Ph.D. degree are as follows:

1. Residence as a full-time student for two years.
2. Successful completion of a prescribed schedule of courses.
3. Passing the qualifying examination with distinction.
4. Demonstration of proficiency in either French *or* German.
5. Admission to candidacy.
6. Submission of a doctoral dissertation approved by the department.
7. Successful defense of the dissertation.

* On leave, 1972-73.

** On leave, Fall Term, 1972-73.

Program of Study. Each student will be assigned a tutor who will advise him on his course of study and guide him in his preparation for the qualifying examinations. First year students are required to take the pro-seminar in philosophy (Philosophy 200) and six additional semester courses, four of which must be within the Philosophy Department. Second year students are required to take two semester courses from the 200 series and six additional semester courses. The student is also encouraged to take some work in a field other than philosophy that is related to his area of concentration. Such work may be taken in the first or second year and will count toward the fulfillment of the residence and course requirements for the Ph.D. It must have the prior approval of the student's adviser and the department chairman. A second year student may not take more than two semester reading courses in the 300 series; these must also be approved by his adviser and the department chairman.

Qualifying Examination. The qualifying examination is given each September, and the student is required to take it at the end of his first full year of residence. A single comprehensive test will be set, divided historically into three periods: (1) up to A.D. 1500, (2) 1500–1870, (3) since 1870. In addition, there will be an examination on logic, based on Philosophy 115a and 130aR. Candidates are, however, expected to use the examination as an occasion for dealing with the questions raised in an analytical manner, and for developing ideas of their own, rather than for repeating factual information about the history of philosophy. Credit will accordingly be given for analytical power and for original ideas, as much as for a grasp of the historical points at issue.

For each historical period, set books will be named early in the academic year preceding the examination. Candidates are required to show general familiarity with the development of philosophy in each of the three periods. Three texts will be named for each period, covering a range of topics in (e.g.) metaphysics, epistemology, ethics and social philosophy. Specialized texts will occasionally be named, without prejudice to candidates concentrating in other areas of philosophy. All examinations must be passed with distinction within 30 months of initial enrollment in order to qualify for the Ph.D. degree. No examination may be taken more than twice.

Language Requirement. A proficient reading knowledge of either French or German is required. A student must take an examination in either language by the spring term of his first year in residence and must meet the language requirement no later than the beginning of his fifth term in residence. Language examinations will be given early in the fall and spring terms. The department reserves the right to establish additional language requirements when necessary for a student's doctoral research.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he has completed his residence requirement, has passed with distinction all of the qualifying examinations, has fulfilled the language requirements and when the subject of his dissertation has been approved by the department.

Dissertation Topic Oral Examination. To meet the final requirement for admission to candidacy, a student must have departmental approval of a thesis prospectus and must pass with distinction an oral examination in the general area of his proposed topic.

Dissertation and Defense. When a student has been admitted to candidacy, the department chairman will appoint a dissertation adviser and a dissertation committee. The dissertation will be written under the supervision of this committee and when it has been read and accepted by the committee a final oral examination will be scheduled wherein the candidate will defend his dissertation.



Courses of Instruction

PHILOSOPHY 105aR. Plato

An introduction to Plato's thought through an intensive reading of several major dialogues. *Mr. Sommers*

*PHILOSOPHY 105b. Aristotle

Lectures on Aristotle's views on Knowledge, Being, the Cosmos, the Soul, and human life. Extensive reading from *Organon*, *Metaphysics*, *Physics*, *De Anima*, *Ethics* and *Politics* will be required.

*PHILOSOPHY 107b. Medieval Philosophy

*PHILOSOPHY 113b. Aesthetics

Intensive study of some major concepts and issues in the criticism and history of the various arts: expression, genre, style, meaning, symbolism, interpretation, evaluation.

PHILOSOPHY 115a. Intermediate Logic

Propositional calculus. Quantification theory. Satisfiability and validity. Completeness. Loewheim-Skolem theorem. Many-sorted logic. Theory of types.

Mr. van Heijenoort

PHILOSOPHY 116b. History of Modern Ethical Theory

A study of major moral philosophers in the modern period with special attention to Hume, Kant, Bentham, Mill and Bradley. *Miss Ezorsky*

*PHILOSOPHY 117aR. Ethical Theory in the Twentieth Century

Readings in the works of twentieth century authors. Attention will be given to questions concerning the meaning of ethical terms, the nature and function of moral judgments, moral reasoning and principles, and concepts of volition and action as they pertain to problems of ethics.

*PHILOSOPHY 119a. Theory of Knowledge

Such questions as the nature of truth, the reliability of sense perception, and the problem of a priori knowledge will be discussed.

*PHILOSOPHY 121a. Foundations of Mathematics

Formal systems. Godel's theorems and consequences. Consistency proofs. Introduction to the theory of recursive functions. Hilbert's program and institutionalism.

*PHILOSOPHY 124b. Concepts: Their History and Variety

A survey of the major historical theories of concepts and conceptualization with special emphasis on their relevance to contemporary theories of the nature and role of concepts in human culture.

PHILOSOPHY 130a. Philosophy of Logic

An examination of the fundamental notions of logic. Signs and symbols. Sentences, statements, and propositions. Negation, implication, deductibility, logical consequence. Theory of descriptions. The relation of formalized logic to ordinary language. *Mr. Webb*

***PHILOSOPHY 131b. Legacy of Logical Positivism**

An examination of some central tenets of logical positivism; the breakdown of the positivist program; current attempts to grapple with resultant difficulties. Emphasis will be placed on the notions of verification, truth, meaning and conceptual change.

***PHILOSOPHY 132a. 19th Century Philosophy**

A critical review and discussion of selected texts including Hegel, Schopenhauer, Marx, Nietzsche, J. S. Mill, and Bradley.

***PHILOSOPHY 133a. Bertrand Russell and G. E. Moore**

An intensive examination of the major philosophical works of Russell and Moore, with special reference to Russell's logical atomism and Moore's doctrines of sense data.

PHILOSOPHY 133bR. Contemporary Analytic Philosophy

A critical survey of leading men and movements in recent British and American philosophy. *Mr. Burian*

***PHILOSOPHY 134aR. The Continental Existentialists and Their American Counterparts**

A consideration of selective topics from the works of Nietzsche, Kierkegaard, Sartre, James and Dewey.

PHILOSOPHY 135a. Philosophy of Literature

Philosophical problems as reflected in classics of literature, such as the Greek dramatists, Shakespeare, Voltaire, Tolstoy, T. S. Eliot and Proust. *Mr. Weitz*

***PHILOSOPHY 136. Post-Kantian Idealism and Its Critics**

Hegel's work will be contrasted with that of other German idealists, especially that of Fichte, and with the doctrines of the British idealists, Bradley, Green, and McTaggart. The Marxist existentialist and empiricist criticisms of Hegel will be considered.

Prerequisite: Philosophy 167a desirable but not required.

***PHILOSOPHY 137a. Moral Theory and Moral Change**

An examination of the relationship of philosophical theories about morality to the moral practice of society and to the historical explanation of moral change. Among the authors to whom special attention will be paid are Kant and Kierkegaard.

PHILOSOPHY 140b. Philosophy of Science

A critical discussion of major issues in the philosophy of science, including explanation, confirmation, scientific laws and theories and special problems of the social sciences. *Mr. Burian*

PHILOSOPHY 143aR. Continental Rationalism

Intensive study of selected works of Descartes, Spinoza and Leibnitz.

Mr. Diamandopoulos

***PHILOSOPHY 143b. British Empiricism**

Intensive study of selected works of Locke, Berkeley and Hume.

***PHILOSOPHY 144b. Marxism**

An analytical and historical exploration of leading Marxist theses, including the early manuscripts of the 1840's. These theses include the treatment of alienation, dialectical materialism and ideology in light of writings of pragmatists and current materialists.

PHILOSOPHY 145b. Human Action

Selected topics of intention, purpose, will, reason, and courses in action versus movement in human experience.

Mr. Weitz

PHILOSOPHY 147aR. American Pragmatism

A study of major writings of the principal American Pragmatists including C. S. Peirce, William James and John Dewey.

Mr. Aiken

PHILOSOPHY 148b. Philosophy of Social Sciences

An analysis of leading concepts and principles of the social sciences, especially economics, psychology and sociology and a comparison of the social and physical sciences.

Mr. Burian

***PHILOSOPHY 150a. Wittgenstein**

Intensive study of *Philosophical Investigations*, with preliminary examination of earlier works.

PHILOSOPHY 151a. Social and Political Philosophy

A study of several dominant themes in social and political philosophy; the concepts of natural law, civil disobedience and liberty.

Mr. Diamandopoulos

***PHILOSOPHY 152b. Philosophy of History**

A study of leading problems in the theory of history; relativism, determinism, explanation, and objective historical knowledge. Analysis of several leading philosophers of history: Marx, Collingwood, and Popper.

PHILOSOPHY 156b. Philosophy of Mind

An examination of selected current topics, including the concept of willing, intentionality, and the mind-body problem.

Mr. Sommers

PHILOSOPHY 157aR. Philosophy of Language

Nature and uses of language, theories of meaning, and predication.

Mr. Greenberg

PHILOSOPHY 158a. Experience, Substance and Identity

An analytical investigation of certain problems in the area of metaphysics. Reference will be made to traditional as well as contemporary philosophers.

Mr. Sommers

* Not to be given in 1972-73.

***PHILOSOPHY 160b. Linguistic Philosophy**

Examination of critical linguistic methods in analytic philosophy.

PHILOSOPHY 167a. Kant

A contemporary analytic approach to certain problems in the *Critique of Pure Reason*.
Mr. Greenberg

PHILOSOPHY 200. Pro-Seminar

Required of all first year students.

Staff

PHILOSOPHY 203a. Seminar in Greek Philosophical Thought

See History of Ideas 203a for description.

Mr. Diamandopoulos

PHILOSOPHY 203b. Seminar in Rationalism: Spinoza's Political Treatises

Mr. Diamandopoulos

PHILOSOPHY 215b. Advanced Topics in Logic*PHILOSOPHY 230a. Seminar in Classical Logic**

Mr. Sommers

PHILOSOPHY 235a. Seminar on Truth*PHILOSOPHY 300-306. Readings in Philosophy**

300a and b. Mr. Aiken

304a and b. Mr. Sommers

301a and b. Mr. Burian

* 305a and b. Mr. van Heijenoort

302a and b. Mr. Diamandopoulos

306a and b. Mr. Weitz

303a and b. Mr. Greenberg

PHILOSOPHY 400-406. Dissertation Research

Independent research for the Ph.D. degree.

400. Mr. Aiken

404. Mr. Sommers

401. Mr. Burian

405. Mr. van Heijenoort

402. Mr. Diamandopoulos

406. Mr. Weitz

403. Mr. Greenberg

Physics

Objectives

The graduate program in physics is designed to equip the student with a broad understanding of all major fields of physics and to train him to carry out independent original research. This objective is to be attained by formal course work and supervised research projects. As the number of students who are accepted is limited, a close contact between students and faculty is maintained, permitting close supervision and guidance of each student.

Advanced degrees will be granted upon evidence by the student of his knowledge, understanding and proficiency in classical and modern physics,

* Not to be given in 1972-73.

and in mathematics. The satisfactory completion of advanced courses will constitute partial fulfillment of these requirements. Research upon which theses may be based, with residence at Brandeis, can be carried out in the following areas:

Theoretical Physics: Quantum theory of fields; quantum electrodynamics; elementary particle physics; general theory of relativity; quantum statistical mechanics; thermodynamics of irreversible processes; quantum theory of the solid state; the many-body problem; kinetic theory of ionized gases; plasma physics; stellar constitution; stellar and galactic evolution; radiative transfer; cosmology and cosmogony.

Experimental Physics: High energy experimental physics; atomic and molecular beams; solid state physics; nuclear magnetic resonance; phase transition phenomena; low temperature physics; radio astronomy; light scattering; positron physics.

Admission

As a rule, only candidates for the Ph.D. degree will be accepted. The general requirements for admission to the Graduate School apply to candidates for admission to the graduate area in physics. Admission to advanced courses in physics will be granted following a conference with the student at entrance.

Faculty

Professor STEPHAN BERKO, *Chairman*: Experimental nuclear and solid state physics. Positron interactions in solids.

Professor DONALD L. CASPER (Rosenstiel Basic Medical Sciences Research Center): Structural molecular biology. X-ray crystallography.

Professor STANLEY DESER: Quantum theory of fields. Elementary particles. General relativity.

Professor JACK S. GOLDSTEIN, *Director, Astrophysics Institute*: Astrophysics. Radiative transfer. Stellar interiors.

Professor EUGENE P. GROSS: Quantum theory of multiparticle systems. Quantum theory of solids. Kinetic theory. Plasma physics.

Professor EDGAR LIPWORTH: Atomic and molecular beams.

Professor HOWARD J. SCHNITZER: Elementary particle theory.

Professor SILVAN S. SCHWEBER: Quantum theory of fields. Elementary particle physics. Quantum theory of multiparticle systems.

Associate Professor MAX CHRÉTIEN: Experimental high energy physics.

Associate Professor MARCUS T. GRISARU: Field theory. Mathematical physics. Elementary particles.

*Associate Professor PETER HELLER: Solid state experimental physics.

Associate Professor LAWRENCE KIRSCH: High energy experimental physics.

*Associate Professor ROBERT V. LANGE: Theoretical many body and solid state physics. Biophysics.

Associate Professor HUGH N. PENDLETON III: Elementary particles. S-matrix theory. Quantum theory of atoms, molecules and solids.

Assistant Professor H. DANIEL COHEN: Experimental physics at low temperatures. Liquid helium.

Assistant Professor JACQUES COHEN: Computer science. Programming languages. Non-numerical algorithms.

Assistant Professor WILLIAM S. GORNALL: Experimental solid state and molecular physics.

Assistant Professor ALLEN P. MILLS: Experimental atomic physics. Positronium.

Assistant Professor ALAN T. RAMSEY: Experimental atomic physics.

Assistant Professor PETER SCHMIDT: High energy experimental physics.

Assistant Professor LAWRENCE SCHWARTZ: Theoretical solid state physics. Electronic structure of disordered systems.

Assistant Professor ROBERT STEIN (Astrophysics Institute): Stellar evolution. Fluid dynamics. Solar corona. Magnetohydrodynamics.

Instructor JOHN F. C. WARDLE (Astrophysics Institute): Experimental radio astronomy.

Degree Requirements

Program of Study. The requirements for advanced degrees in the Department of Physics are as follows:

Master of Arts

1. One year's residence as a full-time student.
2. Eighteen semester hours of advanced courses in physics.
A thesis on an approved topic may be accepted in place of a semester course.
3. Reading knowledge of French, German, or Russian.
4. Satisfactory performance in the General Examination.

* On leave, 1972-73.

Doctor of Philosophy

1. Two years' residence as a full-time student.
2. Twenty-seven semester hours of advanced courses in physics.
3. Reading knowledge of two foreign languages chosen from French, German and Russian. (Italian may be substituted for French.) A knowledge of computer programming may be substituted for a *second* language.
4. Outstanding performance in the General Examination.
5. Passing of an Advanced Examination in topics related to the student's thesis subject. This examination will normally be taken after preparatory studies in the prospective field of research.
6. Doctoral thesis and final oral examination.

Program of Study and Course Requirements. Normally, first year graduate students will elect lecture courses from the 100 series; second year students from the 200 series. To obtain credit toward residence for a graduate course taken at Brandeis, a student must achieve a final grade of "A" or "B" in that course. A student who obtains a grade lower than "B" or an "Incomplete" in two or more courses in any term will not be allowed to continue his studies beyond the end of that academic year. (A course from which a student withdraws after midterm will be considered as "Incomplete.")

A student may obtain credit for advanced courses taken at another institution provided their level corresponds to the level of the graduate courses at Brandeis and that he obtained an honor grade in these courses.

Residence Requirements. A student may obtain up to one year's residence credit toward the Ph.D. requirements for graduate studies taken at another institution. No transfer residence credit will be allowed toward fulfillment of the Master's requirements.

Teaching. It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Language Examination. The Language Examination consists of a written translation of a scientific text into English. It is arranged informally between the student and the foreign language examiner. The requirements for the Computer Programming examination are a reasonably complete knowledge of FORTRAN, skill in programming, and familiarity with the most important methods of numerical analysis.

General Examination. The General Examination consists of a series of written examinations and of two oral examinations administered by faculty committees. One language must be taken before the General Examination.



The General Examination is designed to test whether a student has understood and integrated the material of his undergraduate and first year graduate studies. The written examinations cover classical mechanics, quantum mechanics, electricity and magnetism, and a special subject chosen by the student. Their contents are not related to particular lectures at Brandeis. To prepare for the General Examination the student is advised to consult the graduate adviser as early as possible.

The General Examination should be taken before the *fourth term* of study at Brandeis. Qualified students are encouraged to take it earlier. Students with a Master's degree from another university *must* take it within a year after entering Brandeis.

Outstanding performance on the General Examination qualifies a student for a Master's degree and allows him to present himself for the Advanced Examinations. Satisfactory but not outstanding performance qualifies a student for the Master's degree. The student may present himself, within a year, for re-examination on those parts of the General Examination in which his performance was not outstanding. In the case of unsatisfactory performance a student may either be asked to withdraw from the University or he may be allowed, within a year, to take the General Examination again.

Advanced Examination. The Advanced Examination is designed to test the student's knowledge and abilities in his chosen field of research. After passing the General Examination, the student begins work with an adviser who guides his research program. The adviser should be a member of the Brandeis faculty but in special circumstances may be a physicist associated with another research institution. The adviser will work out a program of study to familiarize the student with current research in his field and to explore possible dissertation topics. The Graduate Committee of the Physics Faculty will then appoint a dissertation committee, to which the student must submit a written progress report at the end of each term. The student's dissertation adviser will be the chairman of the dissertation committee. The Advanced Examination will cover the student's field of research, as well as closely related topics, and will be taken on a date set by the adviser within one term of passing the General Examination. It will be administered by the dissertation committee, which will determine its content and form (written or oral). Depending upon the recommendation of his adviser and his performance in the Advanced Examination, the committee will recommend the student for admission to candidacy for the doctorate, allow him a second attempt, or request him to withdraw from the University.

Dissertation and Final Oral Examination. The doctoral dissertation must represent a piece of research of a standard acceptable to a faculty committee (dissertation committee) appointed for each Ph.D. candidate. The final oral examination, or defense, is an examination in which the student will be asked questions pertaining to his dissertation research.

Courses of Instruction

PHYSICS 100a. Theoretical Mechanics

Mechanics of point systems. Lagrangian and Hamiltonian methods. Small vibrations. Transformation theory. Integral invariants. Kinematics and dynamics of rigid bodies. Perturbation theory. Relativistic mechanics. *Mr. Schweber*

PHYSICS 101a and b. Electromagnetic Theory

Electrostatics, magnetostatics, boundary value problems. Maxwell's Equations. Quasi-stationary phenomena. Radiation. *Mr. Deser*

PHYSICS 102a and b. Quantum Mechanics

A critical review of the experiments leading to the quantum hypothesis; measurements and their quantum mechanical descriptions. Observables and states. Quantum kinematics and dynamics. Description of the properties of atoms, molecules and simple solids. Perturbation theory and elementary particle scattering.

Mr. Mills

PHYSICS 103a. Statistical Physics

Review of thermodynamics; statistical postulates; microcanonical ensemble; Maxwell-Boltzman distribution. Thermodynamic laws; canonical distribution; grand canonical ensemble; specific heats and magnetic susceptibilities in non-interacting systems. Bose systems; Brownian motion; Einstein theory; Perrin experiments; Nyquist-Johnson noise; fluctuation-compliance theorem; correlation functions. Transport theory. Mean field theories of cooperative phenomena.

Mr. Gornall

PHYSICS 103b. Atomic and Nuclear Structure

A survey course of the systematics of elementary atomic and nuclear structure. The intent of the course is to supply a background for such courses as astrophysics and atomic physics. Original papers will be used to supplement the lectures. The approach is more experimental than theoretical.

Prerequisite: Physics 102a or the equivalent.

Mr. Ramsey

PHYSICS 104a and b. Solid State Physics

Thermal, electric and magnetic properties of solids. Lattice vibrations. Specific heat. Band theory of solids. Fermi surfaces. Selected topics in superconductivity and ferromagnetism.

Messrs. Berko and Schwartz

PHYSICS 109a and b. Advanced Laboratory

Staff

PHYSICS 110a. Mathematical Physics

Hilbert spaces. Orthogonal functions. Complex variables. Boundary value problems.

Mr. Grisaru

PHYSICS 113b. First Year Tutorial

Staff

PHYSICS 128a. Electronics for Scientists

This course will furnish a background in basic electronics to those students whose work involves the use of the increasingly wide array of electronic instrumentation.

Prerequisite: Physics 10 or 11, or the equivalent.

Six laboratory hours a week.

Mr. Ramsey

PHYSICS 129b. Computers in Research

An introduction to the computer as a research tool in the physical and social sciences. Topics will include introductory programming, information storage and retrieval, and data analysis. A major portion of the course work will be individual projects in the student's field of concentration.

Mr. Kirsch

***PHYSICS 200a and b. General Relativity**

Introduction to current research and problems in gravitational physics. Physical and mathematical background will be provided as needed, but emphasis will be on recent literature. Active participation by students in discussing the latter will be expected.

* Not to be given in 1972-73.

PHYSICS 201b. Physics of Many Particle Systems

Non relativistic field theory applied to the problems of statistical physics. Applications to hydrodynamics, electromagnetic transport, superconductivity and ferromagnetism. *Mr. Schwartz*

PHYSICS 202a and b. Advanced Quantum Mechanics

Formal theory of scattering. Elementary quantization of radiation field. Quantum theory of multiparticle systems. Green's functions. *Mr. Schnitzer*

PHYSICS 207a. Plasma Physics

Electrodynamics and statistical mechanics of classical plasmas: the dielectric tensor, dispersion relations, fluctuation-dissipation theorem, dynamics of a test particle in a plasma, and plasma kinetic equations. *Mr. Gross*

PHYSICS 208a. Cosmology

The different geometrical models of the universe will be discussed. Then major attention will be devoted to observational tests of different models and physical processes in the early universe. *Messrs. Wardle and Stein*

PHYSICS 209a and b. Laboratory Seminar

Analysis of some important recent experiments. *Mr. Mills*

***PHYSICS 211b. High Energy Physics**

Introduction to the properties of elementary particles. Relativistic kinematics. Experimental determination of the quantum numbers of particles. Interactions, symmetries and conservation laws. Weak interactions, selection rules.

PHYSICS 213a. Tutorial in Physics

Staff

PHYSICS 215b. Interstellar Medium

Observations of large scale hydrogen and magnetic field distribution in the galaxy and physical conditions of HI and HII regions will be discussed together with theories of interstellar cloud formation and cosmic ray propagation. *Messrs. Wardle and Stein*

***PHYSICS 216a. Stellar Atmospheres**

Radiative transfer in stellar atmospheres. Rates of radiative and collisional processes determining atomic states. Theory of line formation. Applications to analysis of stellar spectra.

PHYSICS 311b. Advanced Topics in Mathematical Physics*Research Courses****PHYSICS 401. Experimental Atomic and Molecular Physics**

Messrs. Lipworth and Ramsey

PHYSICS 402. Theoretical Atomic and Molecular Physics *Mr. Pendleton***PHYSICS 403. Experimental Nuclear Physics** *Mr. Berko*

* Not to be given in 1972-73.

- PHYSICS 404. Theoretical Nuclear Physics *Mr. Schnitzer*
- PHYSICS 405. Experimental Elementary Particle Physics
Messrs. Chrétien, Kirsch and Schmidt
- PHYSICS 406. Theoretical Elementary Particle Physics
Messrs. Deser, Grisaru, Pendleton, Schnitzer and Schweber
- PHYSICS 407. Experimental Solid State Physics
Messrs. Berko, Gornall, Heller and Mills
- PHYSICS 408. Theoretical Solid State Physics
Messrs. Gross, Lange and Schwartz
- PHYSICS 409. Relativity *Mr. Deser*
- PHYSICS 410. Mathematical Physics *Messrs. Grisaru and Schweber*
- PHYSICS 411. Statistical Physics *Messrs. Gross and Pendleton*
- PHYSICS 412. Astrophysics *Messrs. Goldstein, Stein and Wardle*
- PHYSICS 413. Experimental Low Temperature Physics *Mr. H. D. Cohen*

Politics

Objectives

The graduate program in politics, leading to the degree of Doctor of Philosophy, emphasizes comprehensive professional training by stressing both the fundamentals of the discipline grounded in the study of political thought and institutions and the requirements of method and analytical skills.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Normally, the student's undergraduate training must be in a field of social sciences to be considered for admission to this program. Applicants are expected to take the Graduate Record Examination.

Faculty

Professor ROY C. MACRIDIS, *Chairman*; Professors **DONALD HINDLEY, MAX LERNER, RUTH SCHACHTER MORGENTHAU, *JOHN P. ROCHE, I. MILTON SACHS; Associate Professors ***GEORGE A. KELLY, *Student Adviser*, PETER WOLL; Assistant Professors ROBERT J. ART, JOHN T. ELLIFF, ROY F. GROW, MARK L. HULLIUNG, MARTIN A. LEVIN, PETER B. NATCHEZ, BRUCE I. OPPENHEIMER, STEVEN J. ROSEN, LOIS WASERSPRING.

* On leave, 1972-73.
 ** On leave, Fall Term, 1972-73.
 *** On leave, Spring Term, 1972-73.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. However, the M.A. degree may be awarded upon satisfactory completion of one year of residence, the demonstration of proficiency in one foreign language, and the acceptance of two graduate seminar papers by the Department or satisfactory achievement in a departmental oral examination whose contents will be decided on an *ad hoc* basis.

Doctor of Philosophy

Students should note certain special features of the program, in particular, (a) instruction in small seminars under close faculty supervision, (b) supervised independent study facilities within the Department, (c) the opportunity to incorporate work in a related field into the degree program. Each student is assigned to a departmental adviser who will help him plan a professional and pertinent program of study. A continuity of faculty direction is insured throughout the program, with allowance for shifts in curricular interest.

Program of Study. The student must complete two years in residence and a minimum of thirty-six course credits. Each graduate student will be required to take three of the following five fields: American Government, Comparative Government, International Relations, Political Theory, and Methods and Methodology or two of the five plus a category of study in another graduate department of the University, as shall be judged valid for the student's program by this Department.

Within each of the three fields chosen, graduate students will be required to take a minimum of *two* formal courses. The standard work load for full-time students is at least three courses in each semester of their first year and at least two formal courses in each semester of their second year. As a rule, reading courses during the first year are discouraged. At the end of the first semester, entering students shall submit to the Graduate Studies Chairman a statement indicating, at minimum, their major and one of the minor fields of interest. At the end of the first year, an informal examination will be given to test the general progress of the student and suggest his future work plan. The examination will relate primarily to the courses taken by the student.

Normally, at the end of the fourth semester or early in the fifth, a formal oral and written examination for candidacy for the Ph.D. degree will be given covering the student's three fields but with emphasis on the sub-fields in which the student has done most of his work. In each case, the examination responds

to the particular program of the student. In the case that one of the student's fields is satisfied in another Department, the appropriate member of that Department joins the examining board. Additionally, students may have the option of satisfying the examination requirement for one of the three fields (so long as it is not the major field and so long as it is not outside the Department) through an equivalent testing method to be authorized by the relevant adviser. In this latter case, the formal examination is restricted to two fields.

Language Requirements. By the end of his first year of study, the student must demonstrate proficiency in one approved foreign language. (Quantitative methods may be offered in lieu of one of the foreign languages but *not* for purposes of obtaining the M.A. degree.) Proficiency in a second language must be demonstrated before the end of the fourth semester in residence. Language proficiency must be demonstrated at Brandeis and certified by the Department.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he has completed his residence requirement, has passed the qualifying examination, has fulfilled the language requirement and obtained departmental approval of the subject and preliminary precis of his dissertation.

Dissertation and Defense. The dissertation will be completed under the supervision of the appropriate member of the departmental faculty. It must be sponsored by a departmental committee of at least two members and have the approval of the graduate committee of the Department. Twenty-four credits will be allowed for dissertation research. It is assumed that the writing of the dissertation will take at least one year and, barring exceptional circumstances, not more than two and one-half years. The student must successfully defend his dissertation at a final oral examination.

Fields and Sub-Fields. For the purpose of illustration, a list of sub-fields is given below. They should be gauged against the Department's curricular listings and resources. In each field, the student is expected to be familiar with pertinent theories and approaches as well as with the content of the sub-field category.

A. Political Theory

1. Plato to the Puritan Revolution. The concepts and history of political thought covering the Greek, Hellenistic, Roman, Byzantine, Medieval, Renaissance, and Reformation periods.

2. Machiavelli to the Present. This overlaps with the previous category in the years 1500–1650. The overlap makes for more concrete areas of study.

3. Problems and Issues in Political Thought. To be arranged with the appropriate adviser. The purpose here is to allow the student some relief from the historical approach.

B. Methods and Methodology

1. Systems and Methods of Modern Political Analysis. This category includes social science methodology, applications of the philosophy of science, analytic philosophy.

2. Statistical and Other Quantitative Methods, Theory of Games, etc.

C. Comparative Politics

1. Comparative Political Institutions. Cross-national study of growth and functions of parties, legislatures, executives, bureaucracies, etc. Soviet Union and European Communist states; Western Europe (emphasis on France, England, Germany); Middle East and North Africa (i.e. Morocco to Iran, Israel); Sub-Saharan Africa; China, Japan, and Korea; South and Southeast Asia; Latin America; Canada, Australia, New Zealand, South Africa, and pre-World War II Commonwealth states.

2. Comparative Political Development. Emphasis on political, economic, and social processes of modernization in terms of comparative political systems.

3. Comparative Political Sociology. The explanation of political phenomena relying upon social, economic, and cultural factors.

4. Nationalism, Imperialism and Revolution. The student is responsible not merely for recent events but for the theory and history of all pertinent material.

D. American Government

1. Public Administration and Public Policy. Theory, historical development, institutions, functions and current practice of the American bureaucracy and related elements.

2. The Federal Government. The Presidency, Congress, the Federal Judiciary and their development and inter-relatedness as political structures.

3. Parties, Interest Groups, and Voting Behavior. The historical development and political sociology of the above, including a grasp of contemporary theoretical work.

4. Constitutional Law.



5. State and Local Politics. Including urban studies, regional political sociology, local parties, and relations of sub-governments with Washington.

E. International Relations.

1. Theories of International Relations.

2. Diplomacy and War. Special concentration on diplomatic history, the theory of negotiations, and the pursuit of political ends by military means.

3. Comparative Foreign Policy.

4. American Foreign Policy and National Security Policy.

Courses of Instruction

AMERICAN GOVERNMENT

*POLITICS 101a. Parties, Pressure Groups and Public Opinion

POLITICS 104a. The American Voter

This course will consider both historical and behavioral theories to explain individual voting decisions and to interpret the meaning of elections in American politics. Topics: the modernization of American political culture, electoral strategies, voter rationality, extremism and radical politics, and the consequences of electoral outcomes.

Mr. Natchez

POLITICS 107bR. The Politics of Public Policy

This course will examine the nature of public policy outputs of political subsystems in American government. Particular attention will be paid to education, welfare, medical care and tax reforms.

Mr. Woll

* Not to be given in 1972-73.

POLITICS 111aR. The American Congress

This course will discuss the structure and behavior of the Congress. It will include a discussion of the origins and consequences of the committee system and the rules governing each House of Congress, particularly those relating to the Seniority System. Additionally, this course will consider the relationship between the Congress and the Executive Branch.

Mr. Oppenheimer

POLITICS 113bR. The American Presidency

An analysis of the nature and role of the American Presidency. The contemporary institution of the presidency will be examined, and its effectiveness discussed in terms of the requirements of the modern democratic state. The course will include discussions of the sources of presidential power, the constitutional basis of the presidency, the role of the Executive Office, the relationship between the Presidency and Congress, the judiciary, and the bureaucracy.

Mr. Oppenheimer

POLITICS 115a. History of American Constitutional Law and Theory

Mr. Elliff

POLITICS 115b. History of American Constitutional Law and Theory

Mr. Elliff

POLITICS 116b. Civil Liberties in America

Mr. Elliff

POLITICS 117a. Administrative Law

An examination of the role of administrative agencies in law making and adjudication. Particular emphasis will be given to problems of defining and protecting the public interest as well as the rights of individuals and groups directly involved in administrative proceedings.

Mr. Woll

POLITICS 120aR. Politics of Urban Areas

An analysis of the management of conflict in urban areas and its institutional (the distribution of authority and influence), demographic, and cultural setting. Special emphasis on the relationship between patterns of conflict management of urban governments and the public services provided by these governments, such as criminal justice, education, welfare and poverty programs.

Mr. Levin

***POLITICS 121a. The Politics of Poverty, Class and Race in Urban Areas**

An examination of the interrelated problems of class, race, poverty and social change in urban areas. Special emphasis on the public policies directed toward these problems.

***POLITICS 123b. The Politics of Urban Criminal Justice**

Analysis of the behavior of police, prosecutors and trial court judges in urban areas. Special emphasis on the relationships between these officials and the political systems of the urban areas. Evaluation of these officials' behavior and especially its effect on their clients.

(See also Politics 168a and 168b, American Foreign Policy)

POLITICS 125a. Political Development in the Black Community

See AAAS 125a.

*Mr. Adam***POLITICS 213b. Policy Formation**

A seminar. A study of aspects of policy making with reference to various organs of decision making in the Federal Government.

*Mr. Woll***POLITICS 219a. Policy-Making in Urban Areas**

An examination of the development in urban areas of policies relating to poverty, class, race, and the administration of criminal justice. Special emphasis on the political conflict generated in the development and the relationship of political decision-makers and social science "experts."

*Mr. Levin***POLITICS 220b. American Political Process**

A seminar. Alternative causal models of American political behavior. Will include political participation, attitudes and opinion structures, voting behavior, and Congressional and Presidential policy formation. Some background in quantitative research is highly desirable.

*Mr. Natchez***POLITICS 221b. Selected Topics in American Politics***Mr. Oppenheimer***POLITICS 297a. The Presidential Elections**

Section I. Offered in conjunction with Politics 97a.

*Mr. Oppenheimer***POLITICS 297b. Political Parties**

Section I. Offered in conjunction with Politics 97b.

*Mr. Sacks***POLITICS 297b. The Chinese Revolution**

Section II. Offered in conjunction with Politics 97b.

*Mr. Grow***POLITICS 297b. The History and Politics of the Poor in Modern America**

Section III. Offered in conjunction with Politics 97b.

*Mr. Levin***COMPARATIVE POLITICS****POLITICS 130a. The Political and Social Institutions of the Soviet Union**

Beginning with a brief historical study of the Bolshevik revolution, this course will analyze the ideological and institutional sources of the Soviet state and party structures. Particular attention will be devoted to institutional development and its political, economic, and social causes and consequences. The final section will examine continuity and change in the post-Stalin period.

*Mr. Sacks****POLITICS 132b. The Soviet Union in World Affairs**

This course will examine Soviet foreign policy in the light of ideological and state considerations. The decay of world communism as a single power center, the phenomenon of "polycentrism," and the changing pattern of communist state relations with the West and with the underdeveloped world will be discussed.

* Not to be given in 1972-73.

POLITICS 140a. The Politics of Africa

Changing approaches to the study of Africa: conquest, colonialism, the nationalist era and post-independence problems. Country case studies, including Ghana, Guinea, Senegal, Ivory Coast, Tanzania, Kenya and South Africa. Political ideas of Nkrumah, Toure, Nyerere, Senghor. Experiments in planning and economic development. Lectures and readings are supplemented by films. *Mrs. Morgenthau*

POLITICS 140b. Seminar in Contemporary African Politics

Seminar in the politics of Africa. Open with the consent of the instructor. Emphasis is on selected topics for research and on the use of primary material where possible. *Mrs. Morgenthau*

POLITICS 144a. The Politics of Latin America: I

This course focuses on revolutionary politics in Latin America, specifically the cases of Mexico, Cuba and Chile. An emphasis is placed on contrasting revolutionary experiences in these countries as well as on some general patterns and problems of politics in Latin America as a whole. *Miss Wasserspring*

POLITICS 144b. The Politics of Latin America: II

The emphasis of this course is on political development in Brazil, Argentina, Bolivia and Costa Rica with a view to examining the phenomena of military intervention, revolutions, and democracy within the Latin American context. There is no prerequisite for entry into the course. *Mr. Hindley*

POLITICS 147a. Chinese Government and Politics: China and Japan

An analysis of the sources of Chinese political behavior, emphasizing the People's Republic period, but touching also on historical, cultural and sociological factors. *Mr. Grow*

*POLITICS 148a. Government and Politics: China and Japan

An examination of the development of political thought and governmental institutions in modern China and Japan. The principal forces producing the Kuomintang and Communist revolutions in China; the Chinese Nationalist and Chinese Communist states; constitutional development and political parties in Japan from the Meiji restoration to the present.

POLITICS 150aR. Government and Politics: Southeast Asia

An introduction to major aspects of the political development of Southeast Asia in the modern period: the impact of Western colonialism, the nationalist struggles, the post-independence attempts to establish viable political systems, communism, and intervention from outside the region. *Mr. Sacks*

POLITICS 152b. Government and Politics: South Asia

An introductory study of the peoples, political thought, and governmental institutions of South Asia (India, Pakistan, and Ceylon). The course will examine subjects such as the role of British colonialism, the development of nationalist and revolutionary movements, and the prominent political personalities associated with these movements, before turning to an analysis of the contemporary domestic and international behavior of these states. *Mr. Grow*

* Not to be given in 1972-73.

***POLITICS 154b. Politics of European Integration**

This course will deal with the theory of integration and the particular pattern of European cooperation and integration in the Common Market. The role of political parties, trade unions, business associations and the resulting integrative political institutions will be studied.

POLITICS 156b. European Political Systems

This course will deal in depth with parties, ideologies, and governmental institutions of European countries, with particular emphasis on Britain, France, and Germany.

Mr. Macridis

POLITICS 161b. Seminar in Colonialism and Imperialism

The course will deal with the political and some of the economic characteristics of colonialism and imperialism and some of their most pervasive manifestations today.

Miss Wasserspring

POLITICS 163bR. The Study of Revolution: Communist Political Thought—Marx to Mao

An introduction to the political and economic themes in Communist literature, concentrating primarily on the works of Marx, Engels, Lenin, Trotsky, Stalin and Mao Tse-tung. The course will investigate in both a topical and historical manner basic theories of state, economic organization, social conflict, political activity and revolution in the writings of each of these men.

Mr. Grow

POLITICS 164a. Comparative Foreign Policy

The course will deal with a discussion of the underlying factors shaping foreign policy and a detailed discussion of the foreign policy of some of the major powers including the United States and the Soviet Union.

Mr. Macridis

POLITICS 165b. The Comparative Study of Fascism

This course will focus on the comparative study of fascism in an attempt to evaluate the meaning and utility in political analysis of the concept of "a fascist model" or "fascist political system." The course will combine a "theoretical" and "case-study" approach to achieve this end. The major portion will dwell on four case studies—the German Third Reich, Mussolini's Italy, Franco's Spain and Peronist Argentina—in an attempt to study in detail the cause, course, characteristics and consequences of fascism in politics.

Miss Wasserspring

POLITICS 203a. Comparative Politics

The study of comparative politics: a critical appraisal of the major approaches that have been used by comparative political scientists, such as political, cultural, elite studies and structural functional analysis, and an evaluation of the hypotheses found within these broad approaches.

Miss Wasserspring

POLITICS 232b. Politics, Development and Modernization

This seminar will deal with a comparative analysis of the factors that account for political change and will examine, with specific illustrations and case studies, the contemporary literature on political development.

Mrs. Morgenthau

*POLITICS 233b. French Political Institutions

This course will discuss in depth selected topics in contemporary French politics.

*POLITICS 240a. Political Sociology

The influence of social structure, economic change and culture upon such political phenomena as voting behavior, styles of participation, the distribution of power, political integration, and violence.

*POLITICS 241a. Selected Topics in Comparative Analysis

INTERNATIONAL POLITICS

POLITICS 168a. American Foreign Policy

An historical analysis of these American foreign policy strategies: isolationism, imperialism, collective security, balance of power, and containment. The effects of foreign pressures and domestic politics on these strategies will be considered. The course will focus on the period 1890 to 1950.

Mr. Art

POLITICS 168b. American Foreign Policy

A post-World War II analysis of American foreign policy. The course will focus on three areas: how foreign policy decisions have been made, how they have been implemented, and what effects they have had. Substantive areas, such as containment in Europe and Asia, nuclear deterrence, alliance management, and foreign aid will be examined to illustrate the dilemmas confronting a superpower.

Mr. Art

POLITICS 169bR. The Military-Industrial Complex

Relevant material from microeconomic theory, bureaucratic theory, the sociology of the military profession, deterrence theory, and political science will be used to generate hypotheses about the existence, causes, nature, and effects of this phenomenon. These hypotheses in turn will be tested against empirical data.

Mr. Art

POLITICS 171a. Multinational Enterprises and National Power

The political implications of the rapid growth over the last two decades of multinational enterprises, involving raw materials and manufacturing, often tying together trade and investment. Effects on national and international politics of the decline in economic power perceived by sovereign states. Students may choose case studies of individual industries or enterprises and their encounters with national and international government—such as oil and Libya, Nigeria, or India, U.S. investment and French, Canadian or Australian politics.

Mrs. Morgenthau

POLITICS 172b. Contemporary International Politics

A discussion of such factors and problems as the origins of the Cold War, Soviet and American foreign policy, nuclear strategy, and internal war as they influence the pattern of international politics.

Mr. Rosen

POLITICS 174a. Problems of National Security

An examination of alternate political, military and economic strategies for securing national interests; a discussion of selected crises in American foreign policy since 1945.

Mr. Rosen

POLITICS 178a. International Politics in the Pacific Area

Analysis of the forces underlying international relations in the Pacific area in the twentieth century. Topics include: Soviet-Asian policies, the strategic position of the emergent Southeast Asian states, Sino-Japanese conflict; America's stake in Asia; Communist China's foreign policy; prospect for peace in the Pacific.

Mr. Sacks

POLITICS 204b. International Politics

An examination of approaches, concepts, and theories in the field of international politics.

Mr. Art

POLITICS 249a. Selected Topics in Foreign Policy

Staff

See also Politics 154b, Politics of European Integration, and 164a, Comparative Foreign Policy.

POLITICS 297a. International Political Economy

Section II. Offered in conjunction with Politics 97a.

Mr. Rosen

POLITICAL THEORY AND METHODS**POLITICS 182a. Political Thought from Plato to Machiavelli**

To be organized as a seminar. Among the topics that will be treated: Mythological-cosmological beginnings, three Platonic dialogues, Thucydides, Epicureanism, Church and State, Renaissance Utopia.

Mr. Kelly

POLITICS 186b. Political Philosophy of the Enlightenment

The Enlightenment and the rise of liberal thought. Through an approach based on intellectual history and political analysis, major figures and movements of thought in the eighteenth century will be closely examined, notably Locke, Montesquieu, Rousseau, and Kant.

Mr. Hulliung

***POLITICS 187a. Liberalism as Political Force and Idea**

An examination of the genesis, rise, supremacy and eclipse of liberal politics, with primary emphasis on the twentieth century. The role of mass society, industrialization, war, technology, and adversary ideologies will be considered. Focus on structures as well as theories.

***POLITICS 190a. Socialism and Revolution**

An analysis of the relationship between socialist and revolutionary thought beginning with the liberal revolutionary tradition of the French Revolution and continuing through the various branches of Marxism.

POLITICS 191bR. Contemporary Political Theory

Aspects of Western political theory and its cultural milieu, from Nietzsche to the present. Including Sorel, the neo-Machiavellians, streams of Marxist thought, Weber, Existentialism, Freudianism, democratic theory, skepticism, linguistic analysis.

Mr. Kelly

POLITICS 193a. Theories of Political Sociology

Concepts developed by "seminal" thinkers and their application to contemporary political analysis. The course will examine the writings of Marx, Freud, Durkheim, Weber and the attempts of present day scholars to utilize their insights.

Mr. Hulliung

POLITICS 250a. Statistical Ideas and Research

See Social Welfare 231a.

Mr. Kurtz

POLITICS 252b. Advanced Psychological Statistics

See Psychology 210b.

Mr. Frederiksen

See also Politics 163bR, The Study of Revolution: Communist Political Thought—Marx to Mao.

Consult with your adviser for the course you may take in the Departments of History of Ideas and Philosophy.

POLITICS 301–314. Readings in Politics

301a and b. *Mr. Elliff*

308a and b. *Mr. Natchez*

302a and b. *Mr. Grow*

309a and b. *Mr. Oppenheimer*

303a and b. *Mr. Hulliung*

310a and b. *Mr. Roche*

304a and b. *Mr. Kelly*

311a and b. *Mr. Rosen*

305a and b. *Mr. Levin*

312a and b. *Mr. Sacks*

306a and b. *Mr. Macridis*

313a and b. *Miss Wasserspring*

307a and b. *Mrs. Morgenthau*

314a and b. *Mr. Art*

POLITICS 400–411. Dissertation Research

Independent research for the Ph.D. degree.

400. *Mr. Art*

406. *Mr. Macridis*

401. *Mr. Natchez*

407. *Mrs. Morgenthau*

402. *Mr. Hindley*

408. *Mr. Roche*

403. *Mr. Kelly*

409. *Miss Wasserspring*

404. *Mr. Lerner*

410. *Mr. Sacks*

405. *Mr. Levin*

411. *Mr. Woll*



Psychology

Objectives

The graduate program in psychology leading to the degree of Doctor of Philosophy is designed for students of promise in the field of general psychology including theoretical, historical and experimental studies and research projects. Courses and seminars in special areas, such as physiological psychology, are offered to all graduate students with the aim of giving students a balanced exposure to diverse areas of psychology. Graduate programs are arranged by the student in consultation with members of the departmental Graduate Affairs Committee.

All regular graduate students pursue programs leading to the Ph.D. degree. The Ph.D. program includes fulfilling the requirements for the degree of Master of Arts, which consists of (a) the successful completion of all First Year requirements (see p. 33); (b) the completion of a Master's thesis; (c) the demonstration of reading proficiency in one foreign language. Candidates for the degree of Master of Arts only are not admitted. Special students, who are not candidates for a degree, may occasionally be admitted; such admissions are for one year and may be renewed upon petition.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

An undergraduate major in psychology is not required, although it will be favored. Students with inadequate preparation may make up their deficiencies during their first year, but without residence credit. Preference will be given to students who have completed, in addition to basic courses in theoretical and experimental psychology, a broad liberal arts program with some training in the natural and social sciences. Students will be admitted on a competitive basis which will include evaluation of previous academic record and the results of the Graduate Record Examinations (Advanced, Aptitude and Profile Tests), and the Miller Analogies Test.

Faculty

Professor RICARDO B. MORANT, *Chairman*: Experimental psychology. Developmental psychology. Perceptual mechanisms. Sensation and perception.

Professor EUGENIA HANFMANN: Clinical psychology. Personality theory.

Professor MARIANNE L. SIMMEL: Sensory physiology. Cognitive processes. Perception.

Associate Professor MAURICE HERSHENSON: Perception. Developmental theory.

*Associate Professor JAMES B. KLEE: Motivation and emotion. Symbolic and cognitive processes. Human and animal learning.

Associate Professor DAVID SCHNEIDER: Social psychology. Personality. Child psychology.

Associate Professor JEROME WODINSKY: Comparative psychology. Learning theory. Sensory physiology.

Assistant Professor JOHN FREDERIKSEN: Mathematical psychology.

Assistant Professor CLAIRE GOLOMB: Humanistic psychology. Child psychology.

Assistant Professor GERALD GORN: Social psychology. Attitude theory and attitude change.

Assistant Professor RAYMOND KNIGHT: Clinical psychology. Experimental psychopathology.

Assistant Professor JAMES LACKNER: Human experimental psychology. Psycholinguistics.

Assistant Professor LESLIE MCARTHUR: Social psychology. Interpersonal attraction.

Assistant Professor ARTHUR WINGFIELD: Human memory. Cognitive processes. Experimental psychology.

Adjunct Lecturer DONALD B. GIDDON: Physiological psychology. Psychosomatic relations.

Degree Requirements

Doctor of Philosophy

Program of Study. Although there is a two-year minimum residency requirement, four years of full-time graduate study are usually required for the Ph.D. The student is expected to carry the equivalent of twelve credit units per semester during his residency. The normal program for each of the four years is noted below.

First Year

Observation and Research Strategies in Psychology (Psychology 200a and b); Advanced Psychological Statistics (Psychology 210a and b); Master's Level Readings for Propositional Review (Psychology 230b); two seminars or courses at the 100 level or above the first semester and one the second semester.

* On leave, 1972-73.

Second Year

Master's Research (Psychology 250–262); three seminars or courses at the 100 level or above each semester. Readings in Psychological Literature (Psychology 290–299) may be taken one semester as one of the seminars or courses. Depending upon teaching obligations (teaching for more than one semester) a student may petition the department to postpone one semester-seminar until the third year.

Third Year

Advanced Research (Psychology 400–408) or Master's Research (Psychology 250–262); Advanced Level Readings for Propositional Review (Psychology 240); one seminar in each semester. Two seminars during the first semester if a seminar or course was postponed from the second year.

Fourth Year

Advanced Research (Psychology 400–408). Students may register for additional courses or seminars with the permission of the department. Courses or seminars may be audited with the permission of the instructor. Courses or seminars in other departments may be taken for degree credit after the first year. Permission of the instructor and the Psychology Department is required.

Departmental Colloquia. Students are expected to attend departmental colloquia during their four years of residence.

Individual Research. Each student is expected to engage in research each semester with the aim of developing competence in its planning, practice, and evaluation.

Teaching. To develop competence in teaching, each student is ordinarily expected to teach during one semester of each academic year. Teaching will normally begin during the second year.

Evaluation of Proficiency. During the first three years, students are expected to demonstrate competence in each of the following areas of psychology:

a. *General Areas:*

1. History and Systems
2. Statistical Methods

b. *Special Areas:*

Group A:

1. Sensation and Perception
2. Learning and Thinking
3. Physiological and Comparative Psychology

Group B:

4. Personality and Motivation
5. Psychopathology and Clinical Psychology
6. Child and Social Psychology

Each area has a standing committee of three appointed by the department chairman at the beginning of each academic year. Each student may nominate any member of the faculty as committee chairman of the area in which he is to be examined or do a proposition defense. If the student's nominee is a member of the standing committee, a fourth member will be appointed by the department chairman. If the examination or proposition review cuts across more than one area, the department chairman will appoint an *ad hoc* committee in consultation with the student and the committee chairman of his choice.

Competence may be demonstrated by examination, proposition or literature review, or successful completion of an appropriate seminar numbered 200 or higher. In at least four of the eight areas, competence must be demonstrated by passing a qualifying examination. At least two of these qualifying examinations must be written and the remaining four by examination on a written proposition. Competence in Statistical Methods must be demonstrated by written examination or successful completion of Psychology 200a and b.

Although a grade of B- will be acceptable for academic credit, a grade of B or higher in a seminar will be required to demonstrate area competence.

Examinations may be written or oral at the student's option. They may be taken separately, and are offered in October, January and May. Students should register for examinations they wish to take three weeks before the scheduled date. Reading lists are provided for each area, and a designated faculty member is available for consultation concerning preparation for any examination. If the student chooses to demonstrate competence by an examination instead of a propositional or literature review, Psychology 230b or Psychology 240 may be taken as reading courses. Although evaluation is continuous, all students will be informed of the faculty's evaluation of their progress and performance at the end of each year. Transfer students from other graduate programs or students with exceptional undergraduate preparation may petition the department for modification of the ordinary schedule of courses, seminars and examinations noted above. Marginal performance in more than one course, seminar or examination, or inability to keep pace with the program may be considered grounds for severance.

Master's Thesis. A Master's thesis should be submitted by the end of the second year. By petition to the department an extension may be granted. The Master's thesis is written under the supervision of one member of the faculty. A second reader, chosen by the chairman in consultation with the faculty sponsor, must recommend the thesis for its acceptance by the department.

Language Requirement. Reading proficiency in at least one foreign language is required. This language must be one in which substantial psychological literature exists. Language examinations are offered by the department four times a year, usually in September, December, February and May. Students are expected to satisfy the language requirement as soon as possible. By regulation of the Graduate School, a student who has not passed an examination in at least one foreign language by the end of his first year of study will not be eligible for financial aid from the university for the second year.

Admission to Candidacy. A student may be admitted to candidacy for the doctorate when he has fulfilled the above requirements.

Dissertation and Defense. Following the completion of all examinations, the student will prepare a prospectus of the proposed dissertation study in consultation with a faculty dissertation sponsor. The prospectus may be based on preliminary research conducted prior to the student's admission to candidacy for the doctorate. Upon approval by the faculty of the department, a dissertation committee of three or more members will be appointed by the department chairman, including the dissertation sponsor as chairman of the committee. The dissertation sponsor will be responsible for advising the student throughout the performance of his work, in consultation with the remaining members of the committee at appropriate times in the course of the work. From time to time, the committee will report the student's progress to the department faculty.

The student may, if he wishes, ask the department for *formal acceptance* of his prospectus. A prospectus that is to be formally accepted must provide a detailed outline of the experimental work to be done (if any) and of its theoretical basis. Such a prospectus will be voted upon by all members of the department. Once the department has formally accepted a prospectus, it will consider itself bound to accept the resulting dissertation as well, regardless of the experimental results, provided that the proposed work has been carried out.

When the student has presented a dissertation prospectus, whether or not he asks for formal acceptance, his dissertation committee will be responsible for evaluating his competence in the field of psychology within which the dissertation falls. This field will ordinarily include more than one of the



areas defined above and may include such related areas as sociology, linguistics, one or more physical sciences, etc. It is assumed that the student will already have demonstrated competence by his performance in Psychology 240. However, if the dissertation prospectus is in a different field of psychology from that evaluated in Psychology 240 or if more than two years have intervened between completing Psychology 240 and submitting the dissertation prospectus in question, then, at its discretion, the committee may require written examination in the thesis field as a whole or in any part of it.

The dissertation should provide evidence of originality, scholarship and research ability. It should be a contribution to knowledge, ordinarily an experimental investigation, but not necessarily so. Upon submission to the chairman of the department of a copy of the thesis, signed by all three members of the thesis committee, and a successful defense of the thesis before all members of the department, the award of the Ph.D. will be recommended to the Faculty Council of the Graduate School.

Courses of Instruction

PSYCHOLOGY 111b. Seminar in Socialization

Readings and discussion on the nature of childhood and adult socialization. Emphasis will be given both to imitation and cognitive approaches and particular areas of concern will be role (especially sex-role) development and the development of moral behavior and judgment.

Enrollment by permission of the instructor.

Mr. Schneider

PSYCHOLOGY 112b. Moral Development

This course will focus primarily on analyses of selected psychological studies of the development of the affective, cognitive, and behavioral dimensions of morality in the individual. In addition, an attempt will be made to relate the psychology of moral development to ethological, philosophical, and sociological discussions of morality.

Prerequisite: Permission of the instructor.

Enrollment limited to fifteen students.

Mr. Schimmel

PSYCHOLOGY 118a. Physiological Psychology

Those aspects of physiology most relevant to psychological investigation: the anatomy and physiology of receptor and effector organs, the neuron and synapse, sensory and motor neural pathways, the integrative activity of the central nervous system, the autonomic nervous system and the action of hormonal factors.

Miss Samuels

PSYCHOLOGY 119b. Comparative Psychology

Comparison of the behavior of various species, including man, in an evolutionary perspective.

Mr. Wodinsky

PSYCHOLOGY 120a. Experimental Psychology

Individual or group research carried out under supervision. Techniques of experimentation, experimental design.

Section I: Research in Cognitive Processes

Miss Nelson

Section II: Research in Perceptual Processes

Mr. Morant

PSYCHOLOGY 120aR. Experimental Psychology

Section I only.

Mr. Wingfield

***PSYCHOLOGY 122b. Advanced Experimental Psychology**

Information processing approach to perception, attention, and memory. Perceptual development.

PSYCHOLOGY 124a. Human Memory

A detailed examination of traditional and contemporary views on the nature and processes involved in short- and long-term memory.

Mr. Wingfield

PSYCHOLOGY 126a. Methods in Personality and Social Psychology

A study of the design and execution of personality and social psychology research. Practical experience carrying out an independent research project either individually or in small groups.

Prerequisite: Permission of the instructor required.

Enrollment limited to fifteen students.

Mrs. McArthur

PSYCHOLOGY 127b. Temporal Patterning of Behavior

Seminar on problems of serial patterning in the perception and production of speech. Discussion of problems in the integration and execution of complex motor patterns.

Enrollment limited to fifteen students.

Mr. Lackner

* Not to be given in 1972-73.

PSYCHOLOGY 128a. Sensory Processes

Intensive study of the structure and physiology of the major sense organs. Review of psychophysical studies of sensory functioning with emphasis on the vestibular system and somesthesia.

Prerequisites: Psychology 2a and 120a.

Mr. Wooten

***PSYCHOLOGY 130b. Psychology of Problem Solving and Learning**

A study of the creative process, its background and consequences and its relation to perception and learning theory.

Enrollment limited to juniors, seniors and graduate students.

***PSYCHOLOGY 131b. Psychology of Symbolic Processes**

Culture as studied primarily from the frame of reference of psychology. Dreams, myths, and art as created, expressed, and as used in language, the humanities and sciences will be studied as psychological data. The place of psychology in relation to the humanities and the other sciences will be evaluated.

Enrollment limited to juniors, seniors and graduate students.

***PSYCHOLOGY 132b. Psychology of Emotions**

A consideration of the value dimension of the individual's dynamic relation to the world about him in both its positive and disruptive aspects.

Enrollment limited to juniors, seniors and graduate students.

***PSYCHOLOGY 133a. Choice, Will and the Ego**

A revaluation of the "active person." Choice, freedom, and responsibility will be considered as psychological problems. A study will be made of the relevance to choice and action of hedonics, knowledge, reason, and religion, and of man's relation to the perception of good and evil, sickness and health. An assessment of the individual's role in disease and conflict.

Enrollment limited to juniors, seniors and graduate students.

PSYCHOLOGY 134a. Abnormal Psychology

A socio-psychological and dynamic approach to behavior pathology with emphasis on current theories of pathogenic family structure.

Mr. Knight

PSYCHOLOGY 134aR. Abnormal Psychology*PSYCHOLOGY 135a. Psychology of Social Change**

A social psychological analysis of social issues. Research includes attitudes, intergroup relations, collective behavior and social movements.

Mr. Gorn

***PSYCHOLOGY 137a. Personality**

Selected personality variables and how they have been investigated. Topics will be studied so as to show their relationship to influential psychological theories.

Not open to students who have taken 138b.

PSYCHOLOGY 137aR. Personality

Mr. Gorn

* Not to be given in 1972-73.

PSYCHOLOGY 140a. Learning and Behavior

The concept of learning will be examined critically, on the basis of infra-human and human studies. Techniques for generating and maintaining learned behavior will receive detailed attention, with emphasis on their relevance to mental retardation, mental illness, delinquency, and education.

Enrollment limited to fifteen students.

Mr. Wodinsky

PSYCHOLOGY 141a. Biological Bases of Motivation

Topics to be treated include hunger, thirst, migration, sexual behavior and parental behavior. Evidence from biology, neurophysiology and endocrinology will be evaluated.

Enrollment limited to fifteen students.

Mr. Wodinsky

PSYCHOLOGY 142b. Psychosomatics

The interrelationships of psychological, social and cultural factors in physical disease. Topics include psychophysiological mechanisms in disease, physiological correlates of mental disease and "somato-psychic problems."

Mr. Giddon

PSYCHOLOGY 143b. Cognitive Processes

Experiments in language, thinking and attention, with special reference to psychopathology.

Prerequisite: Psychology 50b or permission of the instructor.

Enrollment limited to fifteen students.

Mr. Frederiksen

PSYCHOLOGY 144b. The Psychology of Language

Language development; names, concepts and symbols; expressive language; metaphor; problems of translation; pathology of language.

Prerequisites: Permission of the instructor; fluency in at least one foreign language. Enrollment limited.

Miss Simmel

PSYCHOLOGY 145b. Psychopathology in Childhood

A survey of studies on maternal deprivation in infancy, infantile autism, childhood schizophrenia and neuroses. Several therapeutic approaches will be discussed.

Enrollment limited to fifteen students.

Mrs. Golomb

PSYCHOLOGY 146a. Psychopathology and Cognition

Alterations of perceptual and conceptual processes in brain-injured and schizophrenic patients.

Enrollment limited to fifteen students.

Miss Simmel

PSYCHOLOGY 148b. Attitude Change

An examination of the factors influencing attitude change. Major theories of attitude change will be analyzed. The relevance of attitude change theory and research to contemporary social issues will be discussed.

Mr. Gorn

***PSYCHOLOGY 152b. Group Dynamics**

A consideration of classical and current experimental approaches to the study of human interaction. Topics will include: history of group dynamics; conformity; obedience; group cohesiveness; social communication; social deviance; group affiliation; social determinants of emotion, etc.

Enrollment limited to fifteen students.

***PSYCHOLOGY 153a. Developmental Approaches to Cognition**

The study of the development of language and thought in the child. Emphasis on problems of concept attainment and perception. Discussion of the developmental theories of Vygotsky, Werner and Bruner. Critique of association theories of cognitive development.

***PSYCHOLOGY 155b. Advanced Educational Psychology**

This seminar will intend to apply the emerging principles of humanistic and transhumanistic psychology to the problems of learning, teaching and education.

Enrollment limited to senior majors in Psychology with permission of the instructor; all graduate students.

PSYCHOLOGY 159b. Perception

A survey of the field of perception covering method, the perception of space, perceptual constancy, figure formation, and visual recognition. *Mr. Hershenson*

***PSYCHOLOGY 160a. Color Vision and Visual Processes**

Basic parameters and experiments governing visual processes and visual perception will be examined. Particular emphasis will be paid to color vision, theories and data from the points of view of physics, biology, psychology, art and aesthetics.

PSYCHOLOGY 161a. Mental Health in the United States: Supervised Field Work

Miss Hanfmann

PSYCHOLOGY 170b. Tests and Measurements

The course covers test theory, types of measurement, the theory and measurement of reliability and validity, and test construction. The measurement of intelligence, achievement, and personality are also considered. *Mr. Knight*

PSYCHOLOGY 171b. Schools of Psychotherapy

The theories and techniques of several schools of psychotherapy and behavior modification are considered. The theories of personality, methods of intervention, goals of therapy, and relevant research will be emphasized.

Prerequisite: Psychology 134a or 137a.

Mr. Knight

PSYCHOLOGY 173b. Topics in Psycholinguistics

The course will start with an examination of the biological and anatomical specializations in man that make speech possible, proceed to a description of the neurological control problems involved in the production of speech, and conclude with a discussion of recent experiments on language comprehension and production.

Prerequisite: Permission of the instructor.

Mr. Lackner

PSYCHOLOGY 200a and b. Observation and Research Strategies in Psychology *Mr. Morant and Staff*

PSYCHOLOGY 201a. Seminar in Abnormal Psychology *Mr. Knight*

*PSYCHOLOGY 202b. Seminar in Mathematical Psychology
An examination of current mathematical applications in the behavioral sciences.

PSYCHOLOGY 203b. Seminar in Sensation and Perception
The course will cover a graduate level treatment of advanced topics of current theoretical interest in various sensory systems and the implications of this for explaining perceptual phenomena. *Mr. Morant*

*PSYCHOLOGY 204a. Contemporary Issues in Psychology

*PSYCHOLOGY 204b. Contemporary Issues in Psychology

PSYCHOLOGY 205b. Seminar in Memory, Attention and Language
Recent research and theoretical developments in the study of memory as they relate to traditional and contemporary views of selective attention and language in man. *Mr. Wingfield*

PSYCHOLOGY 206b. Seminar in Learning *Mr. Wodinsky*

PSYCHOLOGY 207a. Seminar in Perception
A survey of information processing, approaches to perception, perceptual memory and recognition. *Mr. Hershenson*

*PSYCHOLOGY 207aR. Seminar in Perception

PSYCHOLOGY 208a. Seminar in Thinking and Problem Solving *Miss Simmel*

PSYCHOLOGY 210a. Advanced Psychological Statistics
Descriptive and inferential statistics: t-test, simple analysis of variance, correlating non-parametric tests. *Mr. Gorn*

PSYCHOLOGY 210b. Advanced Psychological Statistics
Topics to be covered will include: correlation and regression, introduction to matrix algebra, multiple regression, partial and multiple correlation, principles of experimental design, and analysis of variance.
Prerequisite: Psychology 210a or permission of the instructor. *Mr. Frederiksen*

PSYCHOLOGY 212a. Methodology for Research in Personality/Social Psychology *Mrs. McArthur*

*PSYCHOLOGY 213a. Quantitative Methods for Personality Research

A survey of statistical methods used in the measurement of individual differences and in the analysis of multivariate experimental data. Topics to be covered will include: theory of psychological measurement, elementary matrix algebra, multiple and canonical correlation, multivariate analysis of variance, and factor analysis.

Prerequisite: Psychology 210b or equivalent.

*PSYCHOLOGY 214a. History of Psychological Thought

*PSYCHOLOGY 215a. Psychological Scaling Methods and Theory

This course will consider methods for obtaining metric information from comparative or categorical judgment data. Topics to be covered will include: basic measurement theory, psychophysical scaling, Thurstonian scaling methods, signal detection theory, multidimensional scaling, and techniques for hierarchical cluster analysis.

Prerequisite: Psychology 210a or the equivalent.

*PSYCHOLOGY 216a. Selected Clinical Topics

*PSYCHOLOGY 217b. Research Seminar in Clinical Psychology

The components of psychological interviewing, especially of "listening," inquiry, commentary, and interpretation to the client, as well as eventual conceptualization for purposes of record and/or research will be demonstrated, practiced and studied.

Prerequisites: Psychology 200a and b, 212a, or permission of the instructor.

*PSYCHOLOGY 218a. Seminar in Social Psychology

This course will provide a general framework for understanding contemporary social psychological theory and research and a feel for the process of research by examining in critical detail one or two key lines of investigation.

PSYCHOLOGY 219a. Physiological Psychology

Study of the neural foundations of behavior. The following will be discussed: electrophysiological analyses of the major sensory pathways; ablation studies; brain stimulation experiments; and the effects of brain surgery and disease in man.

Mr. Lackner

*PSYCHOLOGY 222a. Comparative Psychology

*PSYCHOLOGY 223b. Visual Feature Analysers and Perceptual Aftereffects

PSYCHOLOGY 224a. Seminar in Self-Concept

Mr. Schneider

PSYCHOLOGY 230b. Master's Level Readings for Propositional Review

In consultation with the appropriate area examination committee, each student chooses two propositions at the beginning of the semester. An extensive written, documented defense of the propositions is submitted to the examination committee



by May 1. For certain areas, a literature review may be accepted in lieu of a propositional defense. If the adequacy of the propositional defense or literature review is questioned, then, at the option of either the committee or student, the student will be examined orally on the written material he has submitted.

Mr. Morant and Staff

PSYCHOLOGY 240. Advanced Level Readings for Propositional Review

This course differs from Psychology 230b in that it is a full year course. The written defense of the propositions is submitted by April 1 and defended orally before the area examination committee. The committee will go beyond the specific propositions to examine the student in depth so as to evaluate his knowledge of the broad area from which the propositions were chosen and in which the student intends to do his doctoral dissertation. By petition to the committee the examination may be written. If the propositions chosen or the area of doctoral research cuts across the special areas designated in the catalog, a special area committee will be appointed by the chairman in consultation with the student and his faculty adviser.

Mr. Morant and Staff

PSYCHOLOGY 250-261. Master's Research

Research for the M.A. degree under the supervision of:

250a and b. <i>Mr. Frederiksen</i>	256a and b. <i>Mrs. McArthur</i>
251a and b. <i>Mrs. Golomb</i>	257a and b. <i>Mr. Morant</i>
252a and b. <i>Mr. Gorn</i>	258a and b. <i>Mr. Schneider</i>
253a and b. <i>Mr. Hershenson</i>	259a and b. <i>Miss Simmel</i>
254a and b. <i>Mr. Knight</i>	260a and b. <i>Mr. Wingfield</i>
255a and b. <i>Mr. Lackner</i>	261a and b. <i>Mr. Wodinsky</i>

PSYCHOLOGY 280-291. Readings in Psychological Literature

280a and b. <i>Mr. Frederiksen</i>	286a and b. <i>Mrs. McArthur</i>
281a and b. <i>Mrs. Golomb</i>	287a and b. <i>Mr. Morant</i>
282a and b. <i>Mr. Gorn</i>	288a and b. <i>Mr. Schneider</i>
283a and b. <i>Mr. Hershenson</i>	289a and b. <i>Miss Simmel</i>
284a and b. <i>Mr. Knight</i>	290a and b. <i>Mr. Wingfield</i>
285a and b. <i>Mr. Lackner</i>	291a and b. <i>Mr. Wodinsky</i>

PSYCHOLOGY 300. Department Colloquium and Research Seminar

Mr. Morant and Staff

PSYCHOLOGY 301. Seminar in Advanced Psychological Topics I *Staff*

PSYCHOLOGY 400-408. Dissertation Research

Independent research for the Ph.D. degree.

400. <i>Mr. Klee</i>	405. <i>Miss Simmel</i>
402. <i>Mr. Morant</i>	407. <i>Mr. Hershenson</i>
404. <i>Mr. Senders</i>	408. <i>Miss Hanfmann</i>

Sociology

Objectives

The graduate program in sociology is primarily a doctoral program and is designed for students who intend to devote themselves to teaching and research in sociology. The student may, by satisfying certain requirements, receive the M.A. degree during his course of study. The general objective is to educate students in the major areas of sociology with specialization in several of them.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Sociology Department.

In addition, all prospective students are encouraged to submit written material (papers, etc.) representative of their best work, which need not be, however, of a sociological nature.

Faculty

Professor IRVING K. ZOLA, *Chairman*: Deviance. Sociology of health and illness.

Professor EGON BITTNER: Sociology of law. Social controls.

Professor Emeritus EVERETT C. HUGHES: Social organization. Race and ethnic relations. Occupations and work systems.

Visiting Professor PAUL KECSKEMETI: Social theory. Political sociology.

Professor MORRIS S. SCHWARTZ: Social psychology. Social psychiatry.

Professor MAURICE R. STEIN: Communities. Sociology of literature.

Professor KURT H. WOLFF: Sociological theory. Sociology of knowledge.

*Associate Professor GORDON FELLMAN: Social psychology. Stratification.

Assistant Professor JEROME BOIME: Social and political theory; the relation of violence to social structure.

Assistant Professor CHARLES DERBER: Social psychology. Stratification.

*Assistant Professor CHARLES FISHER: Sociology of science. Collective behavior.

Assistant Professor ROSABETH MOSS KANTER: Social organization. Social psychology. Utopian communities.

*Assistant Professor MICHELLE PATTERSON: Education and society. Issues in education seminar.

Assistant Professor PAMELA ROBY: Urban sociology.

Assistant Professor LARRY ROSENBERG: Field methods. Social psychology of consciousness.

Assistant Professor GEORGE ROSS: Political sociology. Social theory.

Assistant Professor SAMUEL E. WALLACE: Field methods. Violence.

Lecturer CLINTON JEAN: Evolution of human social organization. Sociology of underdevelopment.

In addition to the general fields represented by the above instructors, there are two special training programs: Field Methods Training Program and the Social Organization of Medical Care. For further information, please write to the Sociology Department.

* On leave, 1972-73.

Degree Requirements

Doctor of Philosophy

Program of Study. Students entering the Ph.D. program in Sociology are normally expected to take two years of course work. Of this only one course is required. All incoming students are required to take the introductory departmental Proseminar, Sociology 290a. Among the other courses students are encouraged to take are those on social theory and at least one from among the various methodologies offered. Students will make up an individual program of study in consultation with their advisers.

Credit granted for graduate work done elsewhere will not be considered until the student has successfully completed one year of residence.

After completing three semesters of residence, passing one language examination, and having two Master's papers approved by the Department, the student may be granted an M.A. degree.

Residence Requirement. The minimum residence requirement for the degree of Doctor of Philosophy is two years. It is expected that the Ph.D. will be earned within five years.

Language Requirements. Candidates for the Doctor's degree must demonstrate either proficiency in two foreign languages or knowledge of one language in depth. At least one of the languages must be French or German. A second language may, upon petition to the department, be substituted.

Qualifying Examinations. During a student's residency at Brandeis until the time of his formal admission to candidacy, the specific planning, evaluations and accreditation of his or her entire course of study will be in the hands of each student's Guidance-Accreditation Committee which will be composed of three faculty members. Along with the student, this committee will lay out a general course of study designed to meet the interests and needs of the student. Upon completion of this course of study and research, the student will take an oral qualifying examination covering both general sociology and the areas of his special interests. It is assumed that students will fulfill their accreditation before the end of their third year of residence.

Admission to Candidacy. A student shall be eligible for admission to candidacy when he has fulfilled his residence requirements, foreign language requirements, and passed the departmental qualifying examination.

Dissertation and Final Oral Examination. The candidate will be required to prepare a prospectus for his dissertation before he begins concentrated work. This prospectus must be prepared within six months after he has

passed the qualifying examinations and must be approved by the student's advisory committee and by the department.

When the dissertation is accepted by the department, a final oral examination will be scheduled, wherein the candidate must successfully defend his dissertation before the department members and at least one member of the faculty engaged in graduate instruction outside the department.

Courses of Instruction

*SOCIOLOGY 100a. Development of Modern Sociology

A review of the major achievements of empirical inquiry in European and American sociology from the middle of the nineteenth century to the middle of the twentieth century.

*SOCIOLOGY 101a. Sociology of Conflict and War

Antagonistic processes in various social settings. Antagonism and the social structure. Crisis situations. Origin and resolution of crises. Effects of crises. Evolution and revolution.

SOCIOLOGY 102a. Social Psychiatry

Topics such as the self, interpersonal relations and group processes will be focused on through observations of the internal dynamics of the class and a thorough study of the literature. We will develop a lengthened awareness of the dysfunctions, individual and group institutional life.

Mr. Stein

*SOCIOLOGY 104b. Sociology of Education

What is relevant education at the elementary, secondary, and college levels; what are the political, economic, social, and psychological constraints on education which often keep it irrelevant.

*SOCIOLOGY 106a and b. Sociology of Literature

The relations between society and literary forms in selected historical periods. Emphasis on the relations between problems and methods in inquiry as presented by sociological and humanistic students of man.

Prerequisite: Permission of the instructor.

SOCIOLOGY 107a and b. Issues in Social Psychology

Selected contemporary social psychological and psychiatric theories of the self will be compared to the meditative approach to self study in Yoga. Course requirements include practice of meditation and the Hatha Yoga supports to meditation.

Mr. Rosenberg

*SOCIOLOGY 108b. Critiques of Contemporary Society

*SOCIOLOGY 109. Inequality and Social Policy

This research seminar will examine the status and level of well-being of poor and working class women in the United States and analyze the impact of governmental, company and union policies upon them and their families.

SOCIOLOGY 110a. Sociology of Knowledge

History and historical interpretation of the sociology of knowledge, with particular emphasis on German and recent American literature. *Mr. Wolff*

SOCIOLOGY 111a and b. Political Sociology

Patterns of conflict and consensus and their relationship to political change and stability in contemporary America. This course will examine changing views of power and community from New Deal/Cold War/1950's America to the conflicts of the 1960's and deal analytically with issues of power and political socialization. Evidence will be drawn from sociological writings and documents of a more general cultural nature (films, literature, etc.). *Mr. Ross*

*SOCIOLOGY 112b. Social Stratification

A study of life styles and relationships among different "classes" in American society, theories of social class and political order, and studies of class and social change in revolutionary and other societies.

SOCIOLOGY 113a. Social Ecology of the Urban Environment

The application of ecology to social behavior especially as it takes place within the modern city. The concepts of social ecology are examined and revised in terms of urban sociological research. Emphasis is upon understanding ecology through action projects. *Mr. Wallace*

SOCIOLOGY 114b. Complex Organizations: Prisons, Corporations and Universities

Development, structure, and dynamics of complex organizations: a critique of the literature. The organizational environment of the individual and the social environment of the organization; organizational conflict and change. *Ms. Roby*

SOCIOLOGY 115a and b. Evolution of Human Social Organization

The course is concerned principally with the development of social stratification and the state. Discussions will focus on the differences between the institutions (and their effect on human living) that exist in primitive human communities and those that exist in class society. We will read from, among others, Engels, Leslie White, Morton Fried, Isaac Schapera. *Mr. Jean*

*SOCIOLOGY 116a. Topics in Social History of Black People in America

This course will cover one or more aspects of the black experience. Exact topic or topics will depend upon the development of the African-Afro-American Studies Department.

SOCIOLOGY 117a. Occupational Careers

The labor force is a changing complex of occupations; the career phases and contingencies of various occupations as related to the life cycle of the person and to social changes. Special attention to the career problems of persons of various statuses, e.g., the sexes, races, religions, ethnic groups. *Mr. Hughes*

* Not to be given in 1972-73.

*SOCIOLOGY 118a. The Sociology of the American Jew

*SOCIOLOGY 118b. Jewish Communal Structure and Organization

*SOCIOLOGY 119b. Institutions of a More Humane Society

SOCIOLOGY 120a and b. Sociology of Underdevelopment

The course will discuss the phenomenon of the underdevelopment of the Third World. The perspective is historical, the period covered running from the 1500's to the present. Topics will include the origins of underdevelopment; the nature of relations between the advanced industrial countries and the countries of the Third World; the internal economic, social, and political structure of the Third World societies; and a critical evaluation of different strategies of development.

Mr. Jean

SOCIOLOGY 122a and b. Sociology of Power

An analysis of the consolidation and disaffection of political interaction, obedience and ideology, proceeding on the assumption that the political problem designates a tension between the inhibition and release of alternative forms of community.

Mr. Boime

*SOCIOLOGY 125a. Quantitative Methods in Research

SOCIOLOGY 126a. Sociology of Deviance

Deviance as a social process, its nature and conception, its functional as well as dysfunctional aspects. Survey of theory and research. Concentration on selected instances of individual and social pathology.

Mr. Zola

*SOCIOLOGY 126b. The Institutions of Social Control

SOCIOLOGY 127b. Deviant Communities

The origins, recruitment, and socialization practices, life styles, social control processes, and societal relations of unconventional and deviant communities, including religious, political, and criminal groups. The nature of conventional communities will be understood in comparison. Readings will encompass material from the areas of deviance, collective behavior, social movements. Field work will be required.

Ms. Kanter

*SOCIOLOGY 129a. The Urban Family

SOCIOLOGY 130a. The Family

Exploration of the structure and dynamics of the American family, along with historical and cross-cultural perspectives. Particular attention to the role of women and children in society. Relationship of the family to economic and political institutions. Alternative models for family life including communes.

Ms. Kanter

SOCIOLOGY 132a. Urban Sociology

The course is oriented to the study of urban social problems by means of field assignments. Students will be expected to develop a framework for evaluating programs and policies, and to gain an understanding of the broad range of agencies in the urban field through exchanges of information.

Mr. Bittner and Ms. Roby

*SOCIOLOGY 133b. Comparative Urban Cultures

SOCIOLOGY 135a. Group Process

Interpretation of interpersonal behavior and group development, based in part on observation of the discussion group itself. Readings will include material from psychology and social anthropology as well as sociology. *Mr. Derber*

SOCIOLOGY 135aR. Group Process

Mr. Schwartz and Ms. Kanter

SOCIOLOGY 135b. Advanced Group Process

A continuation of Sociology 135a.

Open to students who have taken Sociology 135a.

Mr. Derber

*SOCIOLOGY 138a and b. War and Revolution

*SOCIOLOGY 141a. Marx and Freud

*SOCIOLOGY 141b. Advanced Marx and Freud

*SOCIOLOGY 142a. Social Psychology: Psychoanalytic Theory and Society

Implications of the psychoanalytic view of personality for the nature and functioning of social institutions, social change, and the possibilities of Utopia.

SOCIOLOGY 143a. Studies in Social Interaction and the Self

Consideration of the underlying forces shaping social interaction with a focus on self-analysis and the interpersonal styles associated with different character structures. Interaction within small group setting will be used to facilitate understanding of linkages between personality and social interaction. *Mr. Derber*

SOCIOLOGY 143b. Advanced Studies in Social Interaction and the Self

Mr. Derber

SOCIOLOGY 145a. Sociology of Life Styles

Experiential learning about the configures culture now emerging in America through multiple sense modalities, including lectures, readings, films, tapes, slides, modules and the W.A.S.T.E. system. The seventh and final edition of this course by its initiator. *Mr. Wallace*

* Not to be given in 1972-73.



*SOCIOLOGY 147a and b. Social Psychology of Organizations and Groups

SOCIOLOGY 148a and b. Social Psychology of Consciousness

The course will be organized around the concept of "conscious energy" as revealed in some of the many programs designed to awaken higher levels of consciousness (e.g., Zen, Yoga, Sulfism, Taoism). The practice of meditation is required.

Mr. Rosenberg

SOCIOLOGY 150a. Sociology of Revolutionary Change

Comparative study of revolutionary change. The Chinese, Cuban and Algerian revolutions will be examined with emphasis on pre-revolutionary social structure, social disintegration and actual revolutionary processes and post-revolutionary situations. Reading will be drawn from historical sociology, revolutionary theory (Mao, Lenin, Debray, Fanon), and the literature on social movements.

Mr. Ross

SOCIOLOGY 151a. Environmental Research

A research methods course designed to teach through the development and execution of a single project chosen by the class. Methods include those relevant to the specific project undertaken, including participant observation, social unit sampling, and sound recording, photography, depth and structured interviews, questionnaires and secondary data sources.

Mr. Wallace

*SOCIOLOGY 152a. Sociology of Generations

*SOCIOLOGY 154b. Sociology of Science

Science is studied as it is done by men who live in political, social, intellectual, professional, and moral worlds.

*SOCIOLOGY 155b. Social Movements

The politics of the impatient scrutinized from the perspectives of social psychology. Attempts will be made to understand the structure and strategies of cadres. Examples are drawn from contemporary America.

SOCIOLOGY 160a and b. Sociology of Art: Afro-American Art, Literature, Music, and Theater. World as View and World as Event.

This course will trace the ways in which the emergence of a self-conscious black ethnocentric culture becomes a prism through which the Puritan ethos is criticized and an alternative culture is created. Authors covered will include Dunbar, Walker, Langston Hughes, Locke, Toomer, with Richard Wright as a transitional figure, leading to Killens, Ellison, Saunders, Cleaver, Hernton, among others.

To Be Announced

SOCIOLOGY 161a. Historical Sociology: An Exploration of the Black Presence in American History

Starting with the Revolution and proceeding through the Civil War, Reconstruction, World War I, World War II, and the recent period. Topics included will be class and caste, black protest, black churches, and others to be selected partly depending upon the interest of the group.

To Be Announced

* Not to be given in 1972-73.

SOCIOLOGY 162b. Sociology of Language and Communication

This course presents a social and political conception of language as one among other forms of communication. It focuses on the oral "folklorish" quality of black society, in an effort to contrast the stress on communication through taste, touch, and smell in this group, with the emphasis on sight and hearing in the general culture.

To Be Announced

***SOCIOLOGY 169a. Religion and Ethnicity in American History**

See American Civilization 169a.

SOCIOLOGY 188b. Sociology of Law

The legal order considered in a framework of cross-cultural and historical comparison. The role of the instruments of the law and of the administration of justice in contemporary society.

Mr. Bittner

SOCIOLOGY 190b. Social Organization of Medical Settings

An analysis of the structural arrangements of medical practice and of medical settings. Problems of communication and role relationships among professionals and between patients and medical personnel will be examined. The impact of structures and role relationships on quality and quantity of medical care and on use of resources will be analyzed.

Mr. Zola

***SOCIOLOGY 191a. Health, Community, and Society**

An exploration into the interrelationships of the nature of society and societies on the existence and treatment of health and illness. Topics include: conceptions of health and illness, patient careers, and the place of social science in medicine.

***SOCIOLOGY 192. Sociology of the Medical Professions**

This course will provide an analysis of the key occupational groups in medicine, as well as of quasi and marginal practitioners. The selection, recruitment and training of those groups will be examined and the strategic points in their careers will be considered.

SOCIOLOGY 200a and b. Classical Sociological Theory

Major sociological schools of thought—positivism, Marxism, formal sociology, functionalism, structuralism—are studied from a conservative and historical point of view. Each distinct type of theory is traced back to its origin in a definite historical, political and social constellation. It will be shown how theoretical thinking about large-scale comprehensive social phenomena is influenced by extra-theoretical (social, cultural, political) factors.

Messrs. Boime and Kecskemeti

SOCIOLOGY 203. Field Methods in Sociological Research

Intensive practice in sociological observation and concentrated field work along with readings and discussion of the theoretical issues involved.

Mr. Schwartz

SOCIOLOGY 204b. Sociology and History

Discussion of pertinent writings by theorists and philosophers of history, historians, and sociologists. The aim is to elucidate the problems of the "worlds" of the historian and the sociologist.

Mr. Wolff

* Not to be given in 1972-73.

***SOCIOLOGY 207a. Issues in Higher Education Seminar**

Comparative systems of higher education; crisis and change in the university; higher education as a social selection mechanism; specific problem areas to be discussed in depth will be determined by student interest and research.

SOCIOLOGY 208c. Seminar on Applied Sociology

Participants in this seminar will present and discuss their personal and professional experiences in using, applying or implementing sociological concepts, theories, ideas and methods in segments of society. *Messrs. Schwartz and Stein*

SOCIOLOGY 209a. The American Working Class

A research seminar on workers in contemporary America. Problems for discussion may include the historical origins of the present situation, working class political behavior, labor organization, the sociology of contemporary work, the nature and trends of the shape of the American work force. *Mr. Ross*

SOCIOLOGY 211b. Ecology: Its Social Configuration

An ecological approach to social life, including (1) an examination of classical schools of ecology in terms of their contemporary relevance; (2) the development of methods to analyze ecological systems; (3) the types and sources of pollution in social life; (4) the configuration of values supportive of ecological harmony. *Mr. Wallace*

***SOCIOLOGY 212a and b. The Social Organization of Misery**

***SOCIOLOGY 213a. Sociology of Fads and Foibles**

***SOCIOLOGY 214a. Cultures of Taste**

SOCIOLOGY 215b. Ethnomethodology

The study of mundane behavior undertaken under the aegis of the actor's conceptions of reasonableness and practicality, with special emphasis on the function of tacit background presuppositions and the procedures of making common sense. *Mr. Bittner*

SOCIOLOGY 216b. Seminar in Social Theory

For Spring 1973 the topic will be Marxist and conflict sociologies. *Mr. Ross*

SOCIOLOGY 217a and b. Problems and Concepts in Medical Sociology and Deviance

A general seminar on current research and theoretical issues. Individual and group projects will be emphasized. *Mr. Zola*

SOCIOLOGY 218b. Multi-Racial and Multi-Ethnic Societies

Comparative study of multi-ethnic (racial, religious, etc.) societies in various parts of the world, but with emphasis on North Americans; their economic and social structures; problems of personal identity; formal and informal relations among persons of the various categories; conflict, movements and change; ideologies. *Mr. Hughes*

*SOCIOLOGY 222a. Utopia and Utopian Communities

SOCIOLOGY 223a. Seminar in Careers

Given at Boston College.

Mr. Hughes

*SOCIOLOGY 224a. Law Enforcement and the Administration of Justice

SOCIOLOGY 225a and b. Community Sociology

This course will deal with major sociological changes shaping modern community life during the twentieth century.

Mr. Stein

SOCIOLOGY 226a. Theories in Social Psychology

Intensive examination of major theories of group process, interpersonal relationships, the self and society, and social interaction. Theorists considered will include Freud, Cooley, Mead, Dewey, Goffman, Homans, Laing and Buber.

Ms. Kanter

SOCIOLOGY 227a. Group Process Seminar

Mr. Schwartz

SOCIOLOGY 228a. Some Pre-Theoretical Problems of Sociology

An introduction to phenomenology in its bearing on social science and especially sociology through an intensive study of Alfred Schutz.

Mr. Wolff

SOCIOLOGY 229b. Seminar on the Family

Advanced reading, research, and discussion on family process and organization. Focus on internal dynamics of the family and on the family as a social institution in many societies and historical times. Class will undertake individual or collective research projects.

Ms. Kanter

SOCIOLOGY 230–248a and b. Readings in Sociological Literature

230a and b. *Mr. Bittner*

240a and b. *Mr. Stein*

231a and b. *Mr. Boime*

241a and b. *Mr. Wallace*

232a and b. *Mr. Derber*

242a and b. *Mr. Wolff*

*233a and b. *Mr. Fellman*

243a and b. *Mr. Zola*

*234a and b. *Mr. Fisher*

244a and b. *Mr. Kecskemeti*

236a and b. *Ms. Kanter*

245a and b. *Mr. Jean*

237a and b. *Mr. Rosenberg*

*246a and b. *Ms. Patterson*

238a and b. *Mr. Ross*

247a and b. *Ms. Roby*

248a and b. *Mr. Hughes*

SOCIOLOGY 254a. Casting and Forecasting of Medical Roles

A graduate-group-reading-seminar to be offered during the Fall Term 1972.

Prerequisite: Admission only by permission of the instructors.

Messrs. Bittner and Boime

*SOCIOLOGY 255a and b. Seminar in Urban Studies

*SOCIOLOGY 256b. Seminar on Research on Urban History and Development

* Not to be given in 1972–73.

* On leave, 1972–73.

SOCIOLOGY 265a. Methodology for Research in Personality/Social Psychology

See Psychology 212a for description.

Mrs. McArthur

SOCIOLOGY 290c. Pro-Seminar

A seminar meeting once a week in which the faculty introduces their interests and research.

Required of all first year graduate students.

Messrs. Wolff and Bittner

SOCIOLOGY 300c. Colloquium

The purpose of the colloquium is to give staff members, sociologists from other institutions, and post-M.A. students the opportunity to present current research, tentative hypotheses, and more general ideas and positions concerning the study of society.

Staff

SOCIOLOGY 301. Advanced Field Research

A second year course in methods of field research. Students will be placed as participant observers in a number of different institutions and will be individually supervised in their field work guidance and use the seminar as a place to discuss research dissertation problems.

Staff

*SOCIOLOGY 305a and b. Joint Seminars in Social Theory and Social Issues

SOCIOLOGY 400. Dissertation Research Seminar

Open to all advanced students.

Staff

SOCIOLOGY 401-419. Dissertation Research

Independent research for the Ph.D. degree.

401. *Mr. Bittner*

411. *Mr. Schwartz*

402. *Mr. Boime*

412. *Mr. Stein*

403. *Mr. Derber*

413. *Mr. Wallace*

404. *Mr. Fellman*

414. *Mr. Wolff*

405. *Mr. Fisher*

415. *Mr. Zola*

407. *Mr. Hughes*

416. *Mr. Kecskemeti*

408. *Ms. Kanter*

417. *Mr. Jean*

409. *Mr. Rosenberg*

418. *Ms. Patterson*

410. *Mr. Ross*

419. *Ms. Roby*

Theater Arts

Objectives

The Master of Fine Arts Program in Theater Arts is designed both to train and to educate—to develop skilled craftsmen who are also men and women of knowledge and judgment about the art they intend to make their careers.

* Not to be given in 1972-73.

The program combines professionally oriented training in the various theatrical specializations—*Acting, Acting-Directing, Design-Technical, Dramatic Writing* and *Film*—with graduate level study in dramatic theory and literature. It also combines both of these with continual practical experience on and behind the stages of the three Spingold theaters, where the actors act, the directors direct, the designers design and construct, and the playwrights have the opportunity to see their works-in-progress and finished plays performed by casts which include professional actors-in-residence as well as graduate and undergraduate students.

Please note that a degree in the Directing discipline exclusively is not offered by the department.



Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. In addition, the department requires an audition for applicants in Acting and Acting-Directing. Audition material may be of the student's choosing, however, the Audition Committee suggests: one serious and one comic selection of not more than five minutes each. (Three regional auditions are held annually as follows: Chicago—early March; San Jose—early April; Brandeis—mid-April.) Submission of a portfolio is required of Design-Technical applicants, and submission of an original script (or other example of creative writing) is required of Dramatic Writing applicants. When applying, students must define their area of concentration, namely: Acting, Acting-Directing, Design-Technical, Dramatic Writing or Film.

Admission is granted for one academic year at a time. Students in residence must make formal application for readmission to the Graduate School by March 1 of their first year in residence.

Faculty

Associate Professor MARTIN HALPERN, *Chairman*; Professor HOWARD BAY; Visiting Professor THEODORE KAZANOFF; Associate Professors JAMES H. CLAY, *CHARLES W. MOORE; Assistant Professors MAUREEN HENEGHAN, NORMAN RIZZI, PETER M. SANDER, ANDREW J. SILVER, DAVID WESTPHAL; Visiting Assistant Professor DON PETERSON; Lecturers MAGDELINE VOS, CARL TOMLIN; Staff: WALTER DOLAN, BARRY A. ODOM.

Degree Requirements

Master of Fine Arts

Residence Requirements. A minimum of eight full-courses or the equivalent in half-courses at the graduate level is required of all candidates.

Program of Study. The program of study varies for each specialty as given below.

General Examination. Students will be required to pass a general examination in the basic materials of dramatic literature, dramatic theory and criticism, and theater history. This examination may be taken at any time during the candidate's residence, and in case of failure may be repeated once. However, if a candidate elects Theater Arts 202 in his second year of residence and successfully completes the course, this will be considered fulfillment of the general examination requirement.

* On leave, 1972-73.

ACTING

*Required Courses**First Year:*

THEATER ARTS 203. Advanced Acting Studies: I

6 hours a week.

Mr. Sander

THEATER ARTS 207. Body Movement for the Actor: I

5 hours a week.

To be announced

THEATER ARTS 209. Speech Studies for the Actor: I

3 hours a week.

Mrs. Vos

One elective half-course each semester.

Second Year:

THEATER ARTS 204. Advanced Acting Studies: II

6 hours a week.

Mr. Kazanoff

THEATER ARTS 208. Body Movement for the Actor: II

5 hours a week.

To be announced

THEATER ARTS 210. Speech Studies for the Actor: II

3 hours a week.

Mrs. Vos

One elective half-course each semester.

Performance and Production Requirements: Concentrators in Acting are required to audition for and perform as cast in all major productions in Theater I and Theater II, unless excused by the director. They will normally perform in at least two major productions each year, in addition to assignments to the various studio productions in Theater III. Students are also required to participate on production crews for at least one major production during their first year and at least one during their second year.

ACTING-DIRECTING

*Required Courses**First Year:*

THEATER ARTS 203. Advanced Acting Studies: I

6 hours a week.

Mr. Sander

THEATER ARTS 213. Advanced Directing

3 hours a week plus directing two workshop productions in Theater III. This course may also be taken by graduate students in Acting during their second year, with permission of the instructor.

Mr. Kazanoff

In addition, either Theater Arts 211, Scenic Design I, and Theater Arts 219, Lighting Design I, or Theater Arts 217, Costume Design I.

One elective half-course each semester, normally in Dramatic Literature.

THEATER ARTS 170a. Elizabethan and Jacobean Drama

See English 142a for description.

Mr. Craven

THEATER ARTS 171b. American Drama

See English 169b for description.

Mr. Swiggart

THEATER ARTS 180. Seminar in Production Concepts

Each student does an in-depth study of the social and theatrical contexts of two non-contemporary plays, a study leading to production concepts which interpret the plays for today's audiences.

Prerequisites: Formal instruction in Directing and/or Designing and permission of the instructor.

Mr. Clay

THEATER ARTS 202. Seminar

Advanced studies in dramatic theory and literature and theater history. For second year graduate students.

Mr. Halpern

In addition, the following film courses are considered electives: Theater Arts 140a, 140b, 141, 142a, 142b.

Second Year:

THEATER ARTS 202. Graduate Seminar in Dramatic Theory and Literature

3 hours a week.

Mr. Halpern

THEATER ARTS 204. Advanced Acting Studies: II

6 hours a week.

Mr. Kazanoff

In addition, either Theater Arts 211, Scenic Design I, and Theater Arts 219, Lighting Design I, or Theater Arts 217, Costume Design I.

One elective half-course each semester.

Performance and Production Requirements: First Year: Direction of two workshop productions in Theater III.

Stage managing of one Theater I production and serving on production crew for one other major production. Audition for and play as cast in all major productions scheduled at times other than those in which the directing and stage managing requirements are being met.

Second Year: Direction of two major productions, normally in Theater II. One of these will normally be a new play.

Audition for and play as cast in all major productions scheduled at times other than those in which the directing and stage managing requirements are being met.

DESIGN-TECHNICAL

Program of Study

The program of study will be worked out by the student in consultation with the design faculty with courses selected from the following:

THEATER ARTS 211. Scenic Design: I	Mr. Bay
THEATER ARTS 212. Scenic Design: II	Mr. Bay
THEATER ARTS 217. Advanced Costume Design and Construction: I 3 hours a week.	Miss Heneghan
THEATER ARTS 218. Advanced Costume Design and Construction: II 3 hours a week.	Miss Heneghan
THEATER ARTS 219. Lighting Design: I	To be announced
THEATER ARTS 220. Lighting Design: II	Mr. Bay
THEATER ARTS 221. Sketching and Rendering: I	Mr. Rizzi
THEATER ARTS 222. Drafting and Stage Techniques	Mr. Dolan
THEATER ARTS 223. Scenic Painting	Mr. Rizzi
THEATER ARTS 224a. Stage Mechanics	Mr. Dolan

DRAMATIC WRITING

First Year:

THEATER ARTS 215. Seminar in Dramatic Writing: I
3 hours a week plus regularly scheduled individual conferences. Mr. Petersen
Two elective half-courses each semester.

Second Year:

THEATER ARTS 216. Seminar in Dramatic Writing: II
3 hours a week plus regularly scheduled individual conferences. Mr. Petersen
THEATER ARTS 310b. Thesis Play
Two elective half-courses in the first semester. Mr. Petersen

Performance and Production Requirements. Students are required to participate in the preparation of all Theater III studio productions of the shorter plays or longer works-in-progress which they write for the Seminar in Dramatic Writing. They will also be required to participate, either onstage or offstage (e.g., production crew) in at least two major department productions each year.

Language Requirement. Students will be required to demonstrate reading proficiency in one of the following languages: Greek, Latin, French, German or Italian. With permission of the department's Graduate Student Adviser, another relevant language may be substituted in which a significant body of dramatic literature exists.

*THEATER ARTS 224b. Theater Architecture

THEATER ARTS 225. Production Laboratory: I

Staff

THEATER ARTS 226. Production Laboratory: II

Staff

THEATER ARTS 227. Sketching and Rendering: II

Mr. Rizzi

Thesis Production. The graduate design thesis is the final problem in either Theater Arts 212 or 218 depending upon the student's major field of interest—set design or costumes. It is the full presentation of projected designs for the scenery, costumes and lighting for a specific play or opera presented in portfolio form. In some cases, a student's main-stage design assignments in his second year of residence may constitute part of the thesis project.

Participation in Productions. All major productions are designed by graduate students. Therefore, a student may expect to be involved in a design capacity on at least three productions during the year. In addition, the student will act as design consultant and technical director of one Theater III studio production each year as well as participating on various production preparatory crews as arranged in conference with the design faculty. Average time expended per week participating in production assignments is fifteen hours.

• Not to be given in 1972–73.





FILM

Program of Study. Each student must take one film production course, one film esthetics course and either a directing, acting, design or writing course each year. The fourth course may be an elective in another department, with the approval of the Graduate Student Adviser.

THEATER ARTS 140a. Introduction to Film: The Documentary

A screening and analysis course covering documentary films which reflect changing American life and standards in the 20th century. *Mr. Westphal*

THEATER ARTS 140b. Introduction to Film: History of the Cinema

A survey course with screenings and analysis of the great Film Classics, including Expressionism, Neo-realism and Surrealism. *Mr. Silver*

*THEATER ARTS 141. Film in Research

THEATER ARTS 142a. Film Analysis: I

Viewing and discussion of fifteen films to stimulate understanding and appreciation of essentials of the medium. An attempt to discover the capacities of film and to suggest the properties that must be investigated in preparation for criticism. Class discussion augmented by visiting lecturers whenever possible. Fifteen short papers required.

Enrollment limited to thirty students.

Laboratory Fee: \$7.50

Mr. Silver

THEATER ARTS 142b. Film Analysis: II

Intensive study of three filmmakers (Bergman, Antonioni and Godard) with an eye to developing a concept of cinematic style. An analysis of cinematic technique. An analysis of how the vocabulary of film criticism has developed as the technique has developed.

Prerequisite: Theater Arts 142a and permission of the instructor.

Laboratory Fee: \$7.50

Mr. Silver

THEATER ARTS 250. Film Tutorial: I

A workshop for first year graduate students.

To Be Announced

THEATER ARTS 251. Film Tutorial: II

A workshop for second year graduate students.

To Be Announced

*THEATER ARTS 252a and b. Method and Theory in Ethnographic Film

Thesis Films. Each student will be responsible for writing, directing, producing, photographing and editing two films. One film will be made in the first year, the other in the second year. As a general rule, one of these films will be made by the student as a work of personal expression. The other will normally be made on contract for an outside non-commercial granting agency, such as educational television, a government agency, or a similar sponsor. The final, completed release print of the films will constitute the student's thesis.

* Not to be given in 1972-73.

Co-Production. With permission from the faculty, students may work together, in pairs or in groups, to produce their thesis films. Thus, if one student is concentrating in Writing and another in Directing they might be permitted to work as a team to fulfill the requirement.

Participation in Productions. Students are required to assist in the shooting of films by their colleagues. They may also be required to produce, direct or write scripts for such film-making projects as The Dretzin Commentaries or television shows in production on campus or at local television stations.

Language Requirement. Students will be required to demonstrate reading proficiency in one of the following languages: Greek, Latin, French, German or Italian. With permission from the Graduate Student Adviser, another relevant language may be substituted in which a significant body of dramatic or cinematic literature exists. The language requirement must be met by the end of the third semester in residence.

Elective Courses Available to Graduate Students

THEATER ARTS 122a. Modern Drama

The major European dramatists from the mid-nineteenth century through the 1920's, including Ibsen, Strindberg, Chekhov, Synge, Shaw, and Pirandello.

Mr. Halpern

THEATER ARTS 123b. Contemporary Drama

Continental, British and American dramatists from the 1920's to the present, including Brecht, Lorca, Giraudoux, Satre, Beckett, Genet, Eliot, Deurrenmatt, O'Neill, Albee, and Weiss.

Mr. Halpern

THEATER ARTS 124a and aR. Shakespeare

Second semester: Section 1
Section 2

Mr. Craven

Mr. Cunningham
Mr. Craven

THEATER ARTS 125a. History of American Drama

See American Civilization 125a for description.

Mr. Matthews

*THEATER ARTS 125b. History of American Drama

See American Civilization 125b for description.

*THEATER ARTS 135. Popular Arts

*THEATER ARTS 151. Tragedy

*THEATER ARTS 165a. Greek Drama

To be given in 1973-74.

* Not to be given in 1972-73.

Fellowships

Maxwell and Fannie Abbell Teaching Fellowship in Judaic Studies (1954) Created by the late Maxwell Abbell of Chicago, Illinois, to support a teaching fellowship in the field of Judaic Studies.

Ace Wire and Cable Fellowship (1969) Granted to the University by the above concern of Woodside, New York, to offer fellowship aid to an outstanding graduate student.

Viola G. and Michael Addison Fellowship Endowment (1966) Established in honor of becoming a Fellow of the University by Mrs. Michael Addison of New York. The income will provide fellowships for outstanding and deserving students who are doing their advanced work at the University.

Adlay Jewelry Fellowship (1970) Granted by Mr. Howard Saft of New York City. To provide fellowship stipends to outstanding graduate students.

Allied Chemical Foundation Fellowship (1964) Established by the Allied Chemical Foundation of New York. This Fellowship will be awarded, at the University's discretion, to an outstanding graduate student, a citizen of the United States or Canada, who is concentrating in the field of Chemistry, and who has demonstrated an aptitude for research in science.

Jeannette and Louis Altschul Fellowship Fund (1946) Established by the late Jeannette and Louis Altschul of New York City to help subsidize the education of gifted students to complete their graduate program.

American Friends of Hebrew University Lown Fellowship Program (1967) An exchange fellowship program through Hebrew University supported by Mr. Philip W. Lown of Boston, Massachusetts.

Bernard Aronson Teaching Fellowship (1964) Established by Mr. Bernard Aronson of New York, New York, to provide teaching fellowships for graduate students who are concentrating in the sciences.

The Artkraft-Strauss Sign Corporation Fellowship (1969) Established by the Artkraft-Strauss Sign Corporation of New York City, to offer fellowships to outstanding students who are pursuing advanced studies at the Graduate School.

Association of Electrical Contractors, Inc. Fellowship (1969) Established by the Association of Electrical Contractors, Inc. of New York City, New York, to offer a fellowship stipend to an outstanding graduate student.

George Barr Fellowship Endowment (1966) Established by Mr. George Barr of Niles, Illinois, to aid a gifted graduate student.

Charles C. Bassine Fellowship (1961) Established in honor of Mr. Charles C. Bassine of New York City by the Trustees of the Long Island Jewish Hospital on the occasion of his induction as a Fellow of the University, to be used to provide fellowship assistance for outstanding graduate students.

Beatrice Foods Company Fellowship (1962) Established through the generosity of the Beatrice Foods Company of Chicago, Illinois, to provide fellowship aid for gifted graduate students.

Louis D. Beaumont Foundation Fellowship (1968) A grant from the Louis D. Beaumont Foundation of Cleveland, Ohio, to provide fellowship support for gifted graduate students.

Beech-Nut Life Savers, Inc. Fellowship (1962) Established to support fellowship assistance for deserving graduate students through a grant from Beech-Nut Life Savers, Inc. of New York City.

David and Paula Ben-Gurion Israeli Fellowship Fund (1967) Established by Brandeis University in honor of their fiftieth wedding anniversary, to enable an Israeli graduate student to spend a year at Brandeis.

Samuel J. Bernstein Fellowship (1967) Established by Leonard Bernstein in honor of the seventy-fifth birthday of his father, Samuel J. Bernstein, to aid a graduate student in Judaic Studies.

Allan I. Bluestein Fellowship (1960) Established by Allan I. Bluestein through the Jacob Bluestein Foundation, Inc. of New York, to assist deserving students in the field of the humanities, particularly in literature, history and language.

Jacob and Rachel Bluestein Memorial Fellowship (1960) Established by Allan I. Bluestein through the Jacob Bluestein Foundation, Inc. of New York, in memory of his parents, to assist gifted students in the field of the humanities.

Brandeis University-Bethune-Cookman College Fellowship (1969) An annual fellowship to be granted to a gifted graduate of Bethune-Cookman College, Daytona Beach, Florida, for advanced study at Brandeis University Graduate School of Arts and Sciences.

David Brenner Fellowship Fund (1961) An annual fellowship for a deserving graduate student in the social sciences, preferably from abroad and from a newly developing area or country.

Lowell and Frances Hyans Brentano Fund (1972) Granted through a bequest from the estate of Frances H. Brentano, New York. The income to be awarded each year to such graduate students who show special aptitudes and abilities in the social sciences, giving preference to someone who suffers from some physical handicap or disabling disease.

Otto and Mynette Bresky Fellowship Endowment (1962) Established by Mr. and the late Mrs. Otto Bresky of Newton, Massachusetts, the income of which will help to subsidize the graduate education of a gifted and worthy student.

Harry and Esther Brown Fellowship (1963) Established by Mr. and Mrs. Harry Brown of Haverhill, Massachusetts, to provide assistance to a graduate student in the Lown Institute for Contemporary Jewish Studies.

Morris Burg Teaching Fellowship (1957) Established by Mrs. Mildred H. Burg of Brookline, Massachusetts, in memorial tribute to her husband, to support a teaching fellowship in the area of human relations.

Milton H. Callner Fellowship Fund (1966) Established with funds provided under the will of Milton H. Callner, late of Chicago, Illinois, supplemented with matching funds from the Ford Foundation grant, the income to be used for annual fellowships in international affairs or politics.

Campbell Soup Fellowship (1968) Granted by the Campbell Soup Company, Camden, New Jersey, as part of its Aid to Education Program, to help worthy and deserving graduate students.

Sol Cantor Fellowship (1963) Established as a memorial tribute to his mother, Mrs. Pearl Cantor, by Sol Cantor of New York. This fund will provide assistance to needy and promising graduate students.

Joseph and Frances Reitman Caplan Fellowship Endowment (1965) Established in memory of her husband by Frances Reitman Caplan of New York City, the income to be used for the assistance of deserving students and for the promotion of studies that are preparation for a legal career, with special emphasis in the field of international law.

Celanese Fibers Marketing Company Fellowship (1969) To be granted to an outstanding student at the Graduate School of Arts and Sciences.

Celanese Plastics Company Fellowship (1968) Granted by the Celanese Plastics Company to award a fellowship in Political Science to an outstanding student.

Patrick J. Clifford Scholarship and Fellowship Program (1968) Established to honor Patrick J. Clifford, to aid outstanding students.

Patrick J. Clifford Fellowship (1970) Granted by Mr. Patrick J. Clifford of Huntington, Long Island, to offer fellowship aid to an outstanding graduate student.

Aida Coburn Fellowship (1964) Established in honor of his wife by the late Abbot Coburn of Chicago, Illinois. This fellowship will provide partial assistance to a deserving graduate student.

Maxfield J. and Lillian R. Cohen Fellowship Endowment (1965) Established by Mrs. Lillian R. Cohen of Los Angeles, California, in loving tribute to her late beloved husband, Maxfield J. Cohen. The income from this fund will provide assistance to graduate students selected by the University to help them complete advanced training.

Rose and Joseph H. Cohen Fellowship (1962) Established under the terms of a bequest of Joseph H. Cohen, late of New York. The income will provide assistance for students doing their advanced work in Judaic Studies at Brandeis University.

Jack Cohn Memorial Science Fellowships (1962) Established by the Artists Foundation, Inc. of New York City (Mr. Robert Cohn, President), in memory of the late Jack Cohn, to provide three fellowships annually on the basis of merit and need, to students enrolled in the Graduate School in the area of science.

Consolidated Electric Construction Company Fellowship (1969) Established by Messrs. Monte and William Hurowitz of New York City, to offer fellowship aid to an outstanding graduate student.

Leon J. Coslov Fellowship (1957) Established by Mr. Leon J. Coslov of Glassport, Pennsylvania, to support a teaching fellowship.

Joan Crawford Fellowship in Theater Arts (1968) Established by friends and colleagues of Miss Crawford in honor of her induction as a Fellow of Brandeis University. To be awarded to an outstanding Theater Arts graduate student.

The Irving and Rose Crown Fellowships in American Studies (1969) Established by the Crown families of Chicago, Illinois, and the Arie and Ida Crown Memorial. This generous endowment will offer fellowships to outstanding graduate students who are concentrating in American Studies.

Dan Danciger Graduate Fellowship Trust Fund (1958) Established through a bequest from the estate of the late Dan Danciger of Fort Worth, Texas, to provide fellowship assistance for graduate students of outstanding academic potential to enable them to pursue academic careers regardless of financial limitations.

Sadie and Joseph Danciger Fellowship Endowments (1967) To be granted to a student in the Philip W. Lown Graduate Center for Contemporary Jewish Studies who is engaged in Jewish communal service and educational work or pursuing research in Contemporary Jewish Studies. Established by Harry L. Jacobs, Arthur Mag and Commerce Bank of Kansas, as Trustees of the Sadie Danciger Fund, established under her last will and testament.

Ezra and Rita Denerstein Fellowship (1971) Established by Mr. and Mrs. Denerstein of New York, to offer fellowship aid to worthy and deserving students in the Benjamin S. Hornstein Program for Jewish Communal Service.

Frank J. Doft Memorial Fellowship Endowment (1965) Established as a memorial to their son and brother by the Doft Family of Lawrence, Long Island, New York. The income will provide fellowships for deserving graduate students who are concentrating in the life sciences.

Eagle Food Centers Foundation Fellowship (1962) Established through the generosity of the Eagle Food Centers Foundation of Rock Island, Illinois, to subsidize gifted graduate students.

The Esther Eig Fellowship Fund (1967) Established by Mr. Samuel Eig of Gaithersburg, Maryland, to assist graduate students.

Ekco Containers, Inc. Fellowship (1962) Established by Ekco Containers, Inc. of Wheeling, Illinois, to provide fellowship assistance to deserving students.

Max and Frances Elkon Fellowship Endowment (1962) Established by Mr. and Mrs. Max Elkon of New York City. The income to be used to provide fellowship assistance for gifted graduate students.

Rabbi Abraham Joseph and Leah Factor Fellowship Fund (1959) Granted by Mr. John Factor of Beverly Hills, California, to offer fellowship assistance to graduate students in the field of Judaic Studies.

Meyer Factor Fellowship (1963) Established by Harold E. Factor of Chicago, Illinois, to provide fellowship assistance to gifted and needy graduate students.

Leonard L. Farber Fellowship in Urban and Regional Studies (1967) Established by friends and business associates to promote graduate study in these fields.

Bonnie Feiner Memorial Fellowship (1969) To be granted to an outstanding graduate student who is doing research in the medical sciences, preferably in the field of cancer. Established in loving memory of their young daughter by Barry B. Feiner '56 and Ellen Feiner '57 of New York City.

Harold L. Fierman Fellowship (1969) Granted by Mrs. Harold L. Fierman of New York City in honor of the induction of her husband as a member of the Board of Trustees of Brandeis University, to be used for graduate study at the Fierman School of Chemistry.

Irving Fine Fellowship for Music Composition (1970) Granted through a bequest from the estate of George Fine, Chestnut Hill, Massachusetts. This fellowship will assist a graduate student in the field of Music who is a composer or interested in becoming a composer.

Nathan and Vivian Fink Fellowship (1963) Established by Mr. and Mrs. Nathan Fink of New York, to help subsidize a gifted graduate student in the Lown Institute for Contemporary Jewish Affairs.

First Interoceanic Corporation Fellowship (1970) Granted by Mr. Dwayne Andreas of First Interoceanic Corporation of Minneapolis. To offer fellowship stipends to outstanding graduate students.

Henry F. Fischbach Fellowship Fund (1967) Established by the family of Henry F. Fischbach of New York to honor his seventy-fifth birthday. This endowment trust will support an interchange of graduate students between the Israel Institute of Technology (Technion) and Brandeis University.

Mr. and Mrs. Gus Fisher Fellowship (1966) Established to honor Mr. and Mrs. Gus G. Fisher, Miami Beach, Florida, by offering assistance to a student doing his or her graduate work.

Charlotte and Elliot Fleisher Fellowship Endowment (1966) Established by Mr. and Mrs. Elliot Fleisher of Newton, Massachusetts. The income to be used to provide fellowship grants to aid young men and women of unusual talent or potential to pursue graduate studies within any academic department of the University or within any disciplinary program.

F. Julius Fohs Memorial Tuition Fellowship (1967) Established by the Fohs Foundation of Roseburg, Oregon, to benefit an Israeli student concentrating in the applied sciences.

Harry K. and Emma R. Fox Charitable Foundation Fellowship (1962) Established by the Harry K. and Emma R. Fox Charitable Foundation of Cleveland, Ohio, to support a partial fellowship for a deserving graduate student who, without this assistance, would be unable to complete his advanced studies.

General Foods Fund Fellowship Grant (1961) Established by the General Foods Fund, Inc. of New York City, for fellowship assistance to outstanding graduate students who are concentrating in the area of the life sciences.

Leo Gerstenzang Science Fellowship Endowment Fund (1962) Established by his wife of New York City and Palm Beach, Florida, in memory of her late husband. The income will be used for fellowships to subsidize graduate education and research for deserving graduate students in the field of science.

Gillette Graduate Teaching Fellowships (1967) Created by the Gillette Company of Boston to provide tuition and living stipends for five doctoral candidates in the sciences.

Arnold L. Ginsburg Political Science Fellowship (1968) Granted by Mr. Arnold L. Ginsburg of New York City to aid worthy graduate students concentrating in political science.

Harry and Elka Gitlow Fellowship Endowment in Humanistic Studies (1959) Established by Mr. Albert Gitlow of New York City and members of the family as a memorial tribute.

Albert A. Glassman Fellowship (1962) Established by a bequest of Albert A. Glassman, late of Cleveland, Ohio. This fund will be used for research in the field of medicine or biochemistry.

Pincus Glickman Fellowship in Judaic Studies (1957) An endowment established by Louis J. Glickman of New York City in memory of his father and augmented through gifts of friends and associates, the income to support the teaching of an advanced graduate student.

Glidden-Durkee Graduate Fellowship in Biochemistry (1962) A graduate fellowship established by Glidden-Durkee, Division of SCM Corporation, for support of a deserving graduate student in Biochemistry. This fellowship will provide a grant to the student, payment of tuition and an allowance for each dependent.

Beatrice I. and Jacob Goldberg Fellowship Endowment Fund (1962) Established by Mr. and Mrs. Jacob Goldberg of Brookline, Massachusetts, in honor of their fiftieth wedding anniversary. The income from this fund is to be used to support fellowships.

Mollie Goldberg Memorial Fellowship Endowment (1963) Established as a memorial tribute by Isadore J. Goldberg of Chicago, and Milton D. Goldberg of Glencoe, Illinois. The income will be used to provide an annual fellowship for a deserving student in the Florence Heller Graduate School for Advanced Studies in Social Welfare.

Alexander Goldstein Teaching Fellowship in Social Science (1950) The income from this fund will be used to support a teaching fellowship in the field of social science. Established as a memorial to her brother by the late Miss Lutie Goldstein of San Francisco, California.

Edward Goldstein Teaching Fellowship (1954) A grant from Mr. Edward Goldstein of Boston, Massachusetts, to support a teaching fellowship.

The Samuel Goldwyn Life Science Fellowships (1970) Established by the Samuel Goldwyn Foundation of Los Angeles to provide aid to gifted graduate students in the life sciences. Preference is to be given to foreign born, needy applicants who are seeking advanced study in the United States.

Barnett D. Gordon Fellowship (1968) Established by Mr. Barnett D. Gordon of Chestnut Hill, Massachusetts, to help subsidize a deserving graduate student.

Mr. and Mrs. Ben Gordon Fellowship (1963) Established by Mr. and Mrs. Ben Gordon of Harrison, New Jersey, to provide fellowship assistance for deserving graduate students.

The James Gordon Grant for Government Fellowship (1967) Established by the James Gordon Grant for Government of Chicago, Illinois, to aid qualified fellows in this field.

Maurice Gordon Music Fellowship Endowment (1966) Established by Mr. Maurice Gordon, Newton, Massachusetts, to provide fellowships for students with preference given to those majoring in music.

Paul and Hattye Gordon Fellowship in Social Sciences for Graduate Students (1969) Granted by Mr. Paul R. Gordon of Miami Beach, Florida. The income to be used for financial assistance to graduate students in the area of social sciences.

Grace Foundation Fellowship in Chemistry (1967) Established by the Grace Foundation of New York for advanced work in teaching and research in chemistry.

M. Brenn Green Fellowship in Psychology (1967) Established by Mr. M. Brenn Green of New York to offer fellowship assistance to a deserving graduate student working for a Ph.D. in psychology.

Anna C. Greenstone Memorial Fellowship (1952) Established by her children, Mr. Charles R. Greenstone of San Francisco, California, the late Mr. Stanford M. Green of San Francisco, California, and Mrs. Simon Rubin of New Bedford, Massachusetts.

Leo Haas and Irene Haas Tuition Fund Fellowship (1967) Established through a bequest of the late Leo Haas of Tucson, Arizona, the income to be used for needy graduate students.

Edward Hano Fellowship Endowment (1958) The income from this fund is to provide supplementary fellowship assistance to gifted graduate students enrolled in the Florence Heller Graduate School for Advanced Studies in Social Welfare. A tribute to the late Edward Hano of Granby, Massachusetts, by his wife and members of the family.

Sylvia Harris Fellowships (1967) Established by the Joseph Harris Foundation of New York as a memorial to Sylvia Harris, to offer fellowship aid to deserving graduate students majoring in Theater Arts.

Hartog of California Graduate Fellowship Fund (1961) Established by Hartog of California, to help a graduate student interested in the field of the History of Ideas.

James and Florence Hays Fellowship in the Fierman School of Chemistry (1969) Established by Mr. and Mrs. Hays of New York City, to provide a partial fellowship to a worthy and deserving graduate student in the School.

Mary and Abbey Hirschfield Fellowships in the Humanities (1971) Granted through a bequest from the Estate of Mary Hirschfield, Chestnut Hill, Massachusetts to offer fellowship assistance to graduate students in the Humanities.

Edwin E. Hokin Teaching Fellowship Endowment (1967) Established by his friends in honor of Edwin E. Hokin of Chicago, Illinois, becoming a Fellow of the University. The income will provide assistance for deserving graduate students.

M. Z. and Hannah Holland Fellowship Endowment (1964) Established by the family and friends of Mr. and Mrs. M. Z. Holland of Chicago, Illinois, to honor their fiftieth wedding anniversary and, also, Mr. Holland's seventy-seventh birthday. The income from this fund will offer assistance to deserving graduate students.

Benjamin S. and Ida F. Hornstein Fellowships (1966) Established by Mr. and Mrs. Benjamin S. Hornstein of New York. The income will provide fellowship assistance for either worthy students who are concentrating in the area of Judaic studies, or to aid in the publication of research studies in the field of Judaic culture and education.

Peter A. Isaacson Fellowship in the Lown Institute for Contemporary Jewish Studies (1963) Established by Mr. Peter A. Isaacson of Lewiston, Maine, for gifted students concentrating in the field of Judaic studies.

The Louis Isenberg Fellowship (1963) Established in the Lown Institute of Contemporary Jewish Studies by Louis Isenberg of Brookline, Massachusetts, in memory of Alice Isenberg. To provide assistance for graduate students who are concentrating in this area.

Max Jacoby Fellowship Endowment in Judaic Studies (1967) Established by Mrs. Belle Jacoby of New York in memorial tribute to her husband, the income to provide fellowships for graduate students in the field of Judaic Studies.

Jewish Community Centers of Chicago Fellowship (1968) Granted by their Board of Directors to offer scholarship aid to a student who is enrolled at the Florence Heller Graduate School for Advanced Studies in Social Welfare.

Jewish Community Center of Hunts Point, Bronx, New York, Fellowship Endowment (1962) Established by the Trustees of the Jewish Community Center of Hunts Point, New York, so that the income may be used for gifted and worthy graduate students who are concentrating in the history and literature of traditional Judaism. Preference is given to students who come from the metropolitan New York area.

Max Kagan Fellowship (1962) Established by Mr. Max Kagan of Bangor, Maine, in support of a deserving graduate student at the Philip W. Lown Institute of Advanced Judaic Studies.

Sidney Kahn Fellowship (1970) Granted by Mr. Sidney Kahn of New York City, to offer fellowship assistance to an outstanding graduate student.

Charles L. Kangesser Fellowship (1968) Established through a bequest from the estate of Charles L. Kangesser, late of Cleveland, Ohio, to help subsidize a gifted and needy graduate student.

Robert E. and Harry A. Kangesser Fellowship Trust (1951) Established by Messrs. Robert E. and Harry A. Kangesser of Cleveland, Ohio, the income to be used for teaching fellowships.

Henry Kaufmann Fellowship Endowment in Group and Community Development (1964) Established by the Henry Kaufmann Foundation, Judge Joseph M. Proskauer, Norman S. Goetz, and Samuel Lemberg, all of New York City. The income from this endowed fellowship will support the teaching activities of a faculty member whose doctoral students are specializing in the problems of small groups, neighborhood organizations, and group and community development.

Kaye, Scholer, Fierman, Hays and Handler Fellowship (1970) Granted by the above law firm of New York City, to offer fellowship aid to an outstanding graduate student.

Bernard and Miriam Kessner Fellowship Trust Fund in Biology and Chemistry (1971) Granted by Dr. and Mrs. Bernard Kessner of Bay Harbor, Florida, to provide fellowships to each of ten worthy graduate students annually.

Jack Kirsch Biochemistry Fellowship (1963) Established by the Jane Coffin Childs Memorial Fund for Medical Research to offer fellowship assistance to deserving students in the field of biochemistry.

Richard Kramer Memorial Fellowship (1961) Established in memory of their son, Richard, by Mr. and Mrs. Louis Kramer of Philadelphia, Pennsylvania, to help subsidize a graduate student concentrating in the field of biochemistry.

Lillian Kratter Fellowship (1960) Established in her honor by her husband, Mr. Marvin Kratter of New York City, to be assigned to a female student concentrating in the Graduate School of Music.

Marvin Kratter Fellowship (1960) Established in his honor by his wife, Mrs. Lillian Kratter of New York City, to be assigned to a male student concentrating in the graduate area of biology.

Hyman Kuchai Fellowship (1963) Established by Mr. Hyman Kuchai of Harrison, New York, to provide fellowship assistance for deserving graduate students.

Joseph Kurzon Fellowship (1969) Established by Mr. Joseph Kurzon of New York City, to offer fellowship aid to an outstanding graduate student.

Carl Laemmle Fellowship (1967) Established through a bequest from the estate of Rosabelle L. Bergerman, late of California, daughter of the late Carl Laemmle. To offer fellowship assistance to worthy graduate students.

William Lakritz Fellowship Endowment in Chemistry (1962) Established by the daughters of William Lakritz of New York City and their husbands, Mr. and Mrs. Jack N. Friedman of Glencoe, Illinois, and Dr. and Mrs. Henry Graham of Los Angeles, California, to be used in partial subsidy of graduate students who concentrate in the field of chemistry.

Lapkin Foundation Fellowship (1970) Granted by the Lapkin Foundation of New York City, to provide fellowship stipends to outstanding and deserving graduate students.

Alexander and Shirley Leaderman President's Scholarship and Fellowship Trust Fund (1969) Established by Mr. and Mrs. Alexander Leaderman of Baltimore, Maryland. This trust will offer scholarships and fellowships to worthy and deserving students at the discretion of the President of Brandeis University.

Samuel J. Levy Fellowship (1970) Granted by Mr. Samuel Levy of New York, to offer fellowship assistance to outstanding graduate students.

Berthan and Isaac Liberman Fellowship (1971) Granted by Mr. and Mrs. Liberman of New York City to be awarded to an outstanding graduate student enrolled in the Benjamin S. Hornstein Program for Jewish Communal Service.

Dr. Meno Lissauer Teaching Fellowship in Natural Science (1957) Set up through a major gift by the late Dr. Meno Lissauer of New York City and the birthday tributes of his colleagues in the Metals and Mining Industry.

Milton and Corinne Livingston Foundation Fellowship (1971) Granted by the Milton and Corinne Livingston Foundation of Omaha, Nebraska, to offer fellowship assistance to gifted and needy graduate students.

Loewy Family Foundation, Inc. Fellowship (1970) Granted by the Loewy Family Foundation of New York City. To offer fellowship aid to outstanding graduate students who are engaged in research in the physical sciences, preferably in hydraulics and related fields.

P. Lorillard and Company Fellowship (1962) Established through the P. Lorillard and Company of New York City to help subsidize the education of gifted students to complete their graduate program.

Anna R. Lown Memorial Fellowship in Near Eastern and Judaic Studies (1967) Granted by Dr. and Mrs. Bernard Lown and Mr. and Mrs. Leon H. Fischman to support outstanding graduate students concentrating in Near Eastern and Judaic Studies.

Charles Lubin Fellowship (1963) Established at the annual Chicago dinner by a group of his friends to honor Mr. Charles Lubin. This scholarship will provide assistance to a deserving student.

The Dr. Isador Lubin Scholarship and Fellowship Endowment (1966) Established by his family and friends for the assistance of either undergraduate or graduate students needing aid to enter or continue their studies at Brandeis.

Carl Marks and Company Fellowship (1971) Granted by Mr. Robert Boas of New York City, to offer fellowship aid to an outstanding graduate student.

Theodore Roosevelt McKeldin Fellowship (1957) Established by friends of former Governor McKeldin as a tribute to him. To be used to subsidize gifted graduate students who plan to concentrate in the areas of political science and government.

Abraham Mendelowitz Fellowship Endowment Fund (1959) Established by the Millinery Workers Health and Welfare Fund in honor of Mr. Abraham Mendelowitz of New York City on the occasion of his sixty-fifth birthday. To subsidize outstanding scholars so that they may continue their studies and medical research in biochemistry and microbiology.

David Merrick Fellowship in Theater Arts (1970) Granted by Mr. David Merrick of New York, to offer fellowships to graduate students in the Theater Arts.

Charles E. Merrill Trust Fellowship (1960) Established by the Charles E. Merrill Trust of Ithaca, New York, to assist graduate students in Judaic Studies.

Morris Messing Fellowship (1964) Established by Mr. Morris Messing of Nutley, New Jersey, to provide fellowship assistance for deserving graduate students.

Joseph Millman Memorial Foundation Fellowship (1964) Established by the Joseph Millman Memorial Foundation of Villas, New Jersey, through Mr. Stanley Rappaport. This fund will provide fellowship assistance for a gifted graduate student. Preference is to be given to applicants who are residents of Cape May County, New Jersey.

Bernard and Marjorie Mitchell Fellowship (1967) Given by Mr. and Mrs. Bernard A. Mitchell of Chicago, Illinois, to aid a worthy graduate student in the field of humanities.

Herman Muehlstein Fellowship Fund (1966) Established by the Herman Muehlstein Foundation to provide graduate study for a student or students preparing for social welfare careers. Preference to be given to students coming from the New York area.

Paul Muni Scholarship and Fellowship Program in Theater Arts and Film (1971) Established as a bequest of the late Bella Muni of Hollywood, California in memory of her husband, the former actor Paul Muni. Scholarships are to be awarded to worthy and deserving undergraduates and fellowships to graduate students in Theater Arts and Film.

Max I. and Sophie R. Mydans Fellowship Trust Fund (1972) Established by Mr. and Mrs. Mydans of Brookline, Massachusetts to grant fellowship aid to outstanding graduate students.

National Biscuit Company Fellowship (1962) A grant from the National Biscuit Company of New York City to provide fellowship support for deserving graduate students.

National Furniture Fellowship in Economics (1967) Established by leaders in the Furniture Industry to support graduate study.

Thomas Newman Fellowship (1970) Granted by Mr. Thomas Newman of Rye, New York, to offer fellowship assistance to outstanding graduate students.

David K. Niles Teaching Fellowship in American Government (1957) To be assigned in memory of a Trustee of the University, who served with distinction as administrative assistant to President Roosevelt and President Truman, for a worthy graduate student who plans for a career in American government service.

Lillian Persky Palais Endowment Fellowship (1960) Established by Mr. and Mrs. Abraham S. Persky of Worcester, Massachusetts, in memory of Mr. Persky's sister, as an endowment whose income in perpetuity is to subsidize the tuition of gifted graduate students so that they may complete their science training.

Arnold Picker Fellowship in the Theater Arts (1968) Established by Arnold M. Picker of New York City to support the graduate program in theater arts.

Albert and Selma F. Pilavin Fellowship Endowment (1966) Established by Mrs. Albert Pilavin of Providence, Rhode Island, to be assigned to the Theater Arts Department, preferably to a graduate student interested in playwriting.

Polaroid-Teger Fellowship (1967) Established by the Polaroid Corporation, Cambridge, Massachusetts, in memory of John Teger, former executive at Polaroid and graduate student at the Florence Heller School, to be awarded annually to a student in social gerontology.

Maurice Pollack Foundation Research Fellowship (1956) Established by the Maurice Pollack Foundation of Quebec, Canada, to enable gifted graduate students to pursue research programs in the field of Judaic Studies.

Prince Macaroni Manufacturing Company and the Cleghorn Folding Box Company Fellowship (1962) Established to provide fellowship assistance to deserving graduate students by the Prince Macaroni Manufacturing Company and its subsidiary, the Cleghorn Folding Box Company, of Lowell, Massachusetts.

Norman S. Rabb Fellowship (1967) Established by an act of the Board of Trustees of Brandeis University as a tribute to Mr. Norman Rabb's service as Chairman of the Board of Trustees.

Sidney H. Rabinowitz Memorial Fellowship Endowment (1963) Established by the friends of Sidney H. Rabinowitz in order to perpetuate the spirit of his feeling for his fellow man. The income from this fund will be used to provide fellowship assistance for gifted graduate students in the Humanities.

Minna and Benjamin M. Reeves Fellowship Endowment (1962) Established by Mr. and Mrs. Benjamin M. Reeves of New York City, the income to support the teaching of an advanced graduate student.

Bertha C. Reiss Memorial Fellowship Endowment Fund (1954) Created by the late Dr. Henry Reiss of New York City for the establishment of the Bertha C. Reiss Memorial Fellowship or teaching fellowships. Awards are to be made to students on the basis of their accomplishments in the field of research and/or teaching.

Charles Revson Fellowship Trust (1962) A capital fund established by Charles Revson of New York City, to be assigned to outstanding students who wish to pursue their graduate studies in the areas of biochemistry, chemistry, physics, biophysics, mathematics or psychology.

Meshulam and Judith Riklis Fellowships (1970) Granted by Mr. and Mrs. Meshulam Riklis of New York City, to offer fellowship stipends to outstanding and worthy scholars at the Graduate School of Arts and Sciences.

Benjamin Rosenberg Teaching Fellowship Endowment (1959) Established as a memorial tribute by Mr. and Mrs. Joseph Rosenberg of Fox Point, Wisconsin, to support a teaching fellowship in the field of Polymer Chemistry.

Leo L. Rosenhirsch Memorial Fellowship Fund (1961) Established by Mr. Alfred E. Rosenhirsch and Mrs. Hilda Nussenfeld of New York City to help cover tuition and other expenditures for gifted and needy graduate students.

Edwin M. Rosenthal Teaching Fellowship in the Life Sciences (1961) Established to honor the eighty-second birthday of Edwin A. Rosenthal of Hollywood, Florida, by his daughter, Mrs. Hoke Levin of Detroit, Michigan, to be assigned as a teaching fellowship for a graduate student concentrating in the life sciences.

Julius Rosenwald Teaching Fellowships (1952) A series of teaching fellowships in memory of the distinguished philanthropist, Julius Rosenwald, established by his daughter, the late Mrs. Adele Rosenwald Levy of New York City, to subsidize the development and teaching of gifted graduate students.

Israel Sachs Teaching Fellowship in Social Relations (1952) Established by his wife and children in his memory.

Dr. Harry Sagansky Fellowship Trust (1963) Established by Dr. Harry Sagansky of Brookline, Massachusetts, to be used for subsidies to graduate students so that they may be helped in the completion of their specialized training.

Samuel and Rae Salny Fellowship Endowment in Social Relations (1952) Established by Mrs. Samuel M. Salny and the late Mr. Salny of Boston, Massachusetts, to support a fellowship in the field of social relations.

Shirley and Maurice Saltzman Fellowship Endowment Fund (1961) Established by Mr. and Mrs. Maurice Saltzman of Cleveland, Ohio, so that the income may be assigned to gifted and advanced students who are concentrating in the humanities.

Honorable Howard J. Samuels Fellowship (1968) Granted by the Honorable Howard J. Samuels, former Undersecretary of Commerce, to offer fellowship assistance to worthy graduate students.

Samuel D. and Goldie Saxe Fellowship in Science (1955) Established by Mrs. Goldie Saxe of Brookline, Massachusetts, and children, to support research and teacher training in the field of science.

Edward A. Schaffer Teaching Fellowship Endowment (1959) Established by his wife in memorial tribute, to support a teaching fellowship in the field of humanistic and social sciences.

Alice Boughton Schaffner Memorial Fellowship Endowment (1961) Established under the terms of the will of the late Alice Boughton Schaffner by her designators, Winifred Raushenbush and James Rorty. The income from this fund will be used to provide fellowship support for outstanding women students from racially underprivileged families.

Rabbi Solomon Scheinfeld Fellowship Endowment (1959) Established by the Sylvia and Aaron Scheinfeld Foundation of Chicago, Illinois, as a memorial tribute to Mr. Scheinfeld's distinguished father. The income to be used for fellowship assistance to gifted graduate students, preferably from Wisconsin, in the School for Advanced Studies in Social Welfare.

Schneider Foundation Fellowship in Theater Arts (1968) Granted in honor of Miss Joan Crawford by Mr. Abraham Schneider, New York City. To offer financial assistance to a worthy student in the Graduate School of Theater Arts.

Joseph Schumer Fellowship Endowment Fund (1966) Established by a bequest in the will of Joseph Schumer, late of New York City, the income of which will provide Joseph Schumer Fellowships for needy and gifted students in music.

Ida Hillson Schwartz and Elias Edward Schwartz Memorial Fellowship Endowment Fund (1949) Established as a memorial to Ida Hillson Schwartz of Winter Hill, Massachusetts, by her family. The Fund has been augmented in perpetuity as an exchange fellowship, either to bring gifted young people from Israel to Brandeis or to send Brandeis University students to the Hebrew University in Israel.

Joseph E. Seagram and Sons, Inc. Fellowship Fund (1971) Granted by Joseph E. Seagram and Sons, Inc. of New York, to offer fellowship aid to a worthy and deserving student at the Graduate School of Arts and Sciences.

Helen Segal Memorial Fellowship (1970) Established in loving memory by her family and friends, to offer fellowship aid to an outstanding graduate student in Near Eastern and Judaic Studies.

Morris Sepinuck Teaching Fellowship (1954) Created as a memorial to Morris Sepinuck by his children, Messrs. Samuel and Nathan Sepinuck, and Mrs. George Sorkin of Boston, Massachusetts.

Fannie and Simon Shamroth Fellowship Endowment (1963) Established by the children of Fannie and Simon Shamroth of Lynn, Massachusetts. The income from this fund will be used to help subsidize deserving graduate students.

Leonard Shanhouse Fellowship (1963) Established by Mr. Leonard Shanhouse of Magnolia, Arkansas, to provide fellowship assistance for deserving graduate students.

Robert Shapiro Fellowship in Theater Arts (1967) Established by the bequest of the late Robert Shapiro of New York, to be awarded annually to graduate students in Theater Arts.

Isaiah Leo Sharfman Teaching Fellowship Endowment (1956) Established by Mr. and Mrs. Samuel R. Rosenthal of Highland Park, Illinois, in tribute to Professor Sharfman of the University of Michigan, with preference given to teaching fellows in the area of Economics.

Charles S. Shaughnessy Endowed Fellowship (1970) Established by devoted friends and associates in the Furniture Industry as a tribute to a deeply respected colleague.

Bernard Shivek Memorial Fellowship Endowment (1967) Established in loving memory by the Shivek Family of Chestnut Hill, Massachusetts, the income to offer fellowship assistance to graduate students.

The Shubert Fellowship in Playwrighting (1970) Granted by the Sam S. Shubert Foundation of New York City. To sponsor a graduate student playwright enrolled in the Theater Arts Department who will actively work on a full length drama under the supervision of the Department.

Sylvia and Max L. Shulman Fellowship (1971) Established by Major Shulman of New York City, to offer a fellowship to an outstanding graduate student in the Harold and Minnie Fierman School of Chemistry.

Mr. and Mrs. Abraham Smith Memorial Fellowship (1962) Established by Mr. Samuel Smith of Allentown, Pennsylvania, in memory of his parents, Mr. and Mrs. Abraham Smith, to provide fellowship assistance for worthy graduate students.

Charles E. Smith Family Fellowships (1969) Established by Mr. Charles E. Smith of Washington, D. C., the income of which will be granted to outstanding and needy graduate students.

Jack and Irene Hayes Solomon Foundation Fellowship Endowment (1962) Established by the Jack and Irene Hayes Solomon Foundation of New York City, the income to be used to support fellowships for gifted graduate students.

Sonneblich-Goldman Corporation Fellowship (1970) Granted at the request of Mr. Nathan Goldman of the above firm, New York City, to offer fellowship aid to an outstanding graduate student.

Mr. and Mrs. Harry Stadler Teaching Fellowship in Music (1956) Established by Mr. and Mrs. Harry Stadler of Hollywood, Florida, in memory of their loving mothers, Sarah Stadler and Etta Berger, to support a teaching fellowship in the field of music.

Joseph F. Stein Foundation, Inc. Fellowship (1959) Established by the Joseph F. Stein Foundation, Inc. through Mr. Joseph F. Stein of New York City, for fellowship study in the School of Advanced Studies in Social Welfare.

Sunshine Biscuits, Incorporated Fellowship (1962) Established through a grant from Sunshine Biscuits, Incorporated of Long Island City, New York, to provide fellowship assistance for deserving graduate students.

Gertrude W. and Edward M. Swartz Fellowship Endowment Fund (1954) Established by Mr. and Mrs. Edward M. Swartz of Brookline, Massachusetts, to support a teaching or research fellowship.

Syroco-Holstein Foundation, Inc. Fellowship (1966) Established by the Syroco-Holstein Foundation, Inc. of Syracuse, New York, to provide fellowship assistance to worthy graduate students.

David Tannenbaum Teaching Fellowship in Legal Institutions (1958) An endowment to honor the memory of David Tannenbaum of Beverly Hills, California, established by his friends and admirers.

Thanks to Scandinavia Fellowship (1969) A grant sponsored by Thanks to Scandinavia, Inc. a nonprofit scholarship foundation dedicated to commemorating the valiant deeds of the Scandinavian people in rescuing persons of the Jewish faith during the Hitler tyranny of World War II. A stipend will be awarded annually to a student from one of the following countries: Denmark, Sweden, Norway or Finland.

Ben Tobin Teaching Fellowship (1955) Established by Mr. Ben Tobin of Hollywood, Florida, to support a fellowship in the field of science.

Michael Tuch Fellowship in Hebrew Ethics and Literature (1950) Granted by the Michael Tuch Foundation of New York City, to provide fellowship support for graduate students in the fields of Hebrew Ethics and Literature.

Universal Match Foundation Fellowship (1957) To be awarded to a graduate student, or students, who are concentrating in the fields of physics, chemistry, biochemistry or microbiology. Set up by the Universal Match Foundation of St. Louis, Missouri.

Edyth Usen Fellowship Endowment (1967) Established by Mr. and Mrs. Irving Usen of Newton, Massachusetts. The income will be assigned as a fellowship to a gifted and needy graduate student.

Harry Uviller Fellowship (1962) Established by friends and associates of Harry Uviller, in appreciation for his many years of distinguished service as an impartial arbitrator, and his many other contributions to the advancement of the needle trades industry and the preservation of industrial peace in New York. This fellowship will provide assistance to deserving graduate students.

Rose Mary Waga Fellowship Endowment (1964) Established by Mr. Peter E. Klein of Cleveland, Ohio, as Trustee to provide, in perpetuity, assistance to talented and needy students in the Graduate School.

Leo Wasserman Graduate Fellowship (1962) Established through a gift from the Leo Wasserman Foundation as a memorial to Leo Wasserman, late of Brookline, Massachusetts, the income to be devoted to the aid of students who will pursue their graduate studies at the University's Department of Near Eastern and Judaic Studies.

Ethel B. and Sidney M. Weinstein Fund for Training in Jewish Education (1972) Granted by Sidney M. Weinstein of New Jersey, Chairman of the Board of Overseers of the Philip W. Lown Center for Contemporary Jewish Studies for training in Jewish education.

Carrie Wiener Teaching Fellowship (1950) The income from this fund is to be used for a fellowship, established by Mr. Herman Wiener of Toledo, Ohio, in the name of his wife.

Clement Wilenchick Fellowship Fund in the Theater Arts (1966) Established under the terms of the will of Maria Wilenchick, late of New York, in memory of her son, Clement Wilenchick, who was a painter and an actor.

Leon G. Winkelman Fellowship Endowment Fund (1959) Established by the Leon G. and Josephine Winkelman Foundation of Detroit, Michigan, as a memorial tribute to Leon G. Winkelman, to subsidize a graduate fellowship in the field of gerontology.

The Leila G. Winton Music Composition Fellowship (1969) Established by Mr. Harold M. Winton of New York City. To be awarded to a graduating student, outstanding in the field of music composition, who plans to continue the study of music composition at the graduate level.

Woodbourne Company Fellowship (1970) Granted to the University to offer fellowship aid to an outstanding graduate student.

Paul Ziffren Fellowship (1962) Established by Mr. Paul Ziffren of Los Angeles, California, to provide fellowship assistance for worthy and deserving graduate students concentrating in the social sciences.





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Gustav Ranis, '52, A.B., Ph.D.

Harry Remis, LL.B., LL.D.

Edward Rose, L.H.D.*

Mrs. Madeleine H. Russell, B.A.

Irving Salomon, L.H.D.*

Maurice Saltzman

Louis H. Salvage, L.H.D.

Samuel Schulman, M.B.A.

David Schwartz, L.H.D.

Jacob Shapiro, B.S.

Richard G. Shapiro, M.B.A.**

Theodore H. Silbert, LL.D.

Samuel L. Slosberg, A.B., LL.D.

Simon E. Sobeloff, LL.B., Litt.D.*

Harry H. Stone

Benjamin H. Swig, L.H.D.

Lawrence A. Wien, LL.B., LL.D.

Robert L. Wolfson

Morris B. Zale

* Emeritus

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Stephan Berko, Ph.D.

Victor Harris, Ph.D.

Jay N. Fastow '74

Ellen S. Feldman '73

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Susan Kaufman (Graduate)

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MARVER H. BERNSTEIN, M.A., Ph.D.

Chancellor of the University
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CLARENCE QUINN BERGER, A.M.

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Jack S. Goldstein	<i>Dean of the Graduate School, Associate Dean of</i>
Ph.D., Cornell University	<i>Faculty and Professor of Astrophysics</i>
Leo Treitler	<i>Dean of the College, Associate Dean of Faculty</i>
Ph.D., Princeton University	<i>and Associate Professor of Music</i>
* * * *	
Robert H. Abeles	<i>Rosenstiel Professor of Biochemistry</i>
Ph.D., University of Chicago	
Robert Abramson	<i>Adjunct Lecturer in Jewish Education,</i>
M.H.L., Jewish Theological Seminary	<i>Contemporary Jewish Studies</i>
Hussein M. Adam	<i>Assistant Professor of African and Afro-American Studies</i>
M.A., Harvard University	
** Henry D. Aiken	<i>Charles Goldman Professor of Philosophy</i>
Ph.D., Harvard University	<i>and History of Ideas</i>
Phyllis C. Albert	<i>Instructor in Jewish History</i>
M.A., Brandeis University	
Alexander Altmann	<i>Philip W. Lown Professor of Jewish Philosophy</i>
Ph.D., University of Berlin	
Robert J. Art	<i>Assistant Professor of Politics</i>
Ph.D., Harvard University	
Maurice Auslander	<i>Professor of Mathematics</i>
Ph.D., Columbia University	
Robert G. Azencott	<i>Assistant Professor of Mathematics</i>
Ph.D., Université de Paris	
Louis S. Bagger	<i>Assistant Professor of Music</i>
M.F.A., Princeton University	
Joan Bamberger	<i>Assistant Professor of Anthropology</i>
Ph.D., Harvard University	
Geoffrey Barraclough	<i>Jacob Ziskind Visiting Professor of History</i>
Ph.D., Oriel College, Oxford University	
(All Souls College, Oxford)	
*** Howard Bay	<i>Professor of Theater Arts</i>
George M. Beardsley	<i>Lecturer in Physics</i>
Ph.D., University of North Carolina	
Carl I. Belz	<i>Assistant Professor of Fine Arts</i>
Ph.D., Princeton University	
Arthur Berger	<i>Irving Fine Professor of Music</i>
M.A., Harvard University	
* Robert W. Berger	<i>Associate Professor of Fine Arts</i>
Ph.D., Harvard University	

* On leave, 1972-73.

** On leave, Fall Term, 1972-73.

*** On leave, Spring Term, 1972-73.

- Stephan Berko
Ph.D., University of Virginia
Professor of Physics
- David Sandler Berkowitz
Ph.D., Harvard University
Professor of History
- Joseph S. Berliner
Ph.D., Harvard University
Rosen Family Professor of Economics
- Gerald S. Bernstein
Ph.D., University of Pennsylvania
Assistant Professor of Fine Arts
- Rudolph Binion
Ph.D., Columbia University
Leff Families Professor of Modern European History
- Egon Bittner
Ph.D., University of California, Los Angeles
Harry Coplan Professor in the Social Sciences
- Eugene C. Black
Ph.D., Harvard University
Ottillie Springer Professor of History
- Willard E. Bohn
M.A., University of California, Berkeley
Lecturer in French and Comparative Literature
- Jerome P. Boime
M.A., University of Chicago
Assistant Professor of Sociology
- Ludovico Borgo
Ph.D., Harvard University
Associate Professor of Fine Arts
- David G. Boulware
Ph.D., Harvard University
Jacob Ziskind Visiting Professor of Physics
- Martin Boykan
M.M., Yale Music School
Associate Professor of Music
- Paul H. Brainard
Ph.D., University of Gottingen
Associate Professor of Music
- ***Naftali C. Brandwein
D.R.E., Jewish Theological Seminary of America
Rose B. and Joseph H. Cohen Professor of Modern Hebrew Literature
- Robert Brannum
B.S., Michigan State University
Assistant Professor of Physical Education
- Leo Bronstein
Ph.D., University of Paris, Sorbonne
Professor Emeritus of Fine Arts
- Carlos Brossard
B.A., University of Chicago
Assistant Professor of African and Afro-American Studies
- Edgar H. Brown, Jr.
Ph.D., Massachusetts Institute of Technology
Professor of Mathematics
- Marion Brown, Jr.
Lecturer in African and Afro-American Studies
- Paul L. Brown
M.F.A., Yale School of Art and Architecture
Assistant Professor of Fine Arts
- David A. Buchsbaum
Ph.D., Columbia University
Professor of Mathematics
- Francois J. Buresi
Agrégé des Lettres Modernes, Université de Tours
Lecturer in French
- Richard M. Burian
Ph.D., University of Pittsburgh
Assistant Professor of Philosophy
- Karl F. Canter
Ph.D., Wayne State University
Instructor in Physics

- Anne P. Carter
Ph.D., Harvard-Radcliffe University
Professor of Economics
- Donald L. D. Casper
Ph.D., Yale University
*Professor of Physics and Rosenstiel Basic
Medical Sciences Research Center*
- Iu-Yam Chan
Ph.D., University of Chicago
Assistant Professor of Chemistry
- Max Chrétien
Ph.D., University of Basel
Associate Professor of Physics
- James H. Clay
Ph.D., University of Illinois
Associate Professor of Theater Arts
- Arlene L. Clift
Ph.D., Harvard University
*Assistant Professor of English and African
and Afro-American Studies*
- William J. Cloonan
Ph.D., University of North Carolina
Assistant Professor of French and Comparative Literature
- Helen Codere
Ph.D., Columbia University
Professor of Anthropology
- Carolyn Cohen
Ph.D., Massachusetts Institute of Technology
*Professor of Biology and Rosenstiel Basic Medical
Sciences Research Center*
- Edward Cohen
M.A., University of California, Berkeley
Assistant Professor of Music
- H. Daniel Cohen
Ph.D., Stanford University
Assistant Professor of Physics
- Jacob Cohen
M.A., Yale University
Assistant Professor of American Studies
- Jacques Cohen
Ph.D., University of Illinois
Assistant Professor of Physics
- Saul G. Cohen
Ph.D., Harvard University
Charles A. Breskin Professor of Chemistry
- Andrée M. Collard
Ph.D., Harvard University
Associate Professor of Spanish
- George L. Cowgill
Ph.D., Harvard University
Associate Professor of Anthropology
- Alan E. Craven
Ph.D., University of Kansas
Visiting Assistant Professor of English
- J. V. Cunningham
Ph.D., Stanford University
Paul E. Proswimmer Professor of English and Humanities
- Margaret Dalton
Ph.D., Harvard University
Assistant Professor of Russian
- Robert M. Dankoff
Ph.D., Harvard University
Assistant Professor of Near Eastern and Judaic Studies
- John Putnam Demos
M.A., University of California, Berkeley
Associate Professor of History
- Charles Derber
Ph.D., University of Chicago
Assistant Professor of Sociology
- Stanley Deser
Ph.D., Harvard University
Professor of Physics

- Peter Diamandopoulos *Professor of Philosophy and History of Ideas*
Ph.D., Harvard University
- F. Trener Dolbear, Jr. *Associate Professor of Economics*
Ph.D., Yale University
(*On the Atran Foundation*)
- Paul B. Dorain *Professor of Chemistry*
Ph.D., Indiana University
- Emily P. Dudek *Adjunct Assistant Professor of Chemistry*
Ph.D., Radcliffe College
- James E. Duffy *Professor of Romance Literature and History*
Ph.D., Harvard University
- *Arthur Edelstein *Assistant Professor of English*
A.M., Stanford University
- **David Eisenbud *Assistant Professor of Mathematics*
M.S., University of Chicago
- John T. Elliff *Assistant Professor of Politics*
Ph.D., Harvard University
- Edward Engelberg *Professor of English and Comparative Literature*
Ph.D., University of Wisconsin
- *Herman T. Epstein *Professor of Biophysics*
Ph.D., University of Michigan
- Irving R. Epstein *Assistant Professor of Chemistry*
Ph.D., Harvard University
- *Robert Evans, Jr. *Clinton S. Darling Professor of Economics*
Ph.D., University of Chicago
- Gertrude Ezorsky *Visiting Associate Professor of Philosophy*
Ph.D., New York University
- Ahmed S. Farah *Instructor in African Studies*
A.B., Princeton University
- Gerald D. Fasman *Louis I. and Bessie Rosenfield Professor of Biochemistry*
Ph.D., California Institute of Technology
- *Gordon A. Fellman *Associate Professor of Sociology*
Ph.D., Harvard University
- James L. Fidelholtz *Visiting Assistant Professor of Linguistics*
Ph.D., Massachusetts Institute of Technology
- David Hackett Fischer *Earl Warren Professor of History*
Ph.D., Johns Hopkins University
- Michael Fishbane *Assistant Professor of Hebrew and Biblical Studies*
Ph.D., Brandeis University
- *Charles S. Fisher *Assistant Professor of Sociology*
Ph.D., University of California, Berkeley
- William E. Fitzgerald *Lecturer in Clinical Psychology*
Ph.D., Harvard University
- Emanuel Flumery *Associate Professor of Physical Education*
M.Ed., Boston University
- Robert J. Forbes *Lecturer in Spanish*
M.A., Harvard University

* On leave, 1972-73.

** On leave, Fall Term, 1972-73.

- Bruce M. Foxman *Assistant Professor of Chemistry*
Ph.D., Massachusetts Institute of Technology
- John R. Frederiksen *Assistant Professor of Psychology*
Ph.D., Princeton University
- Gregory L. Freeze *Assistant Professor of History*
M.A., Columbia University
- David M. Freifelder *Associate Professor of Biochemistry*
Ph.D., University of Chicago
- Eberhard Frey *Assistant Professor of German*
Ph.D., Cornell University
- Lawrence H. Fuchs *Meyer and Walter Jaffe Professor of American Studies*
Ph.D., Harvard University
- Chandler M. Fulton *Associate Professor of Biology*
Ph.D., Rockefeller Institute
- Stephen J. Gendzier *Associate Professor of French*
Ph.D., Columbia University
- Martin Gibbs *Professor of Biology*
Ph.D., University of Illinois
- Donald B. Giddon *Adjunct Lecturer in Psychology*
Ph.D., Brandeis University
- Nahum Norbert Glatzer *Samuel Lane Professor of Jewish History
and Social Ethics*
Ph.D., University of Frankfurt
- James F. Goldberg *Assistant Professor of English*
M.A., Columbia University
- Sidney Golden *Henry F. Fischbach Professor of Chemistry*
Ph.D., Harvard University
- Maynard Goldman *Consultant in Music*
B.Mus., Boston University
- Emanuel S. Goldsmith *Assistant Professor of Hebrew and Yiddish Literature*
Ph.D., Brandeis University
(On the Jacob D. Berg Foundation)
- William M. Goldsmith *Assistant Professor of American Studies*
Ph.D., Columbia University
- Fred Goldstein *Consultant in Music*
B.A., Queens College
- Claire Golomb *Assistant Professor of Psychology*
Ph.D., Brandeis University
- Cyrus H. Gordon *Joseph and Esther Foster Professor of
Mediterranean Studies*
Ph.D., University of Pennsylvania
- Gerald Gorn *Assistant Professor of Psychology*
M.Sc., London School of Economics
- William S. Gornall *Assistant Professor of Physics*
Ph.D., University of Toronto
- James R. Green *Assistant Professor of History*
Ph.D., Yale University

- Robert S. Greenberg *Associate Professor of Philosophy*
Ph.D., University of Chicago
- Peter Gripppe *Lester and Joan Avnet Professor of Sculpture*
- Marcus T. Grisaru *Associate Professor of Physics*
Ph.D., Princeton University
- Eugene P. Gross *Professor of Physics*
Ph.D., Princeton University
- *Allen R. Grossman *Associate Professor of English*
Ph.D., Brandeis University
- Lawrence Grossman *Professor of Biochemistry*
Ph.D., University of Southern California
(*Career Award, National Institutes of Health*)
- Roy F. Grow *Assistant Professor of Politics*
M.A., University of Michigan
- Ernest Grunwald *Professor of Chemistry*
Ph.D., University of California, Los Angeles
- William H. Gustafson *Visiting Assistant Professor of Mathematics*
Ph.D., University of Illinois
- Robert R. Gustavson *Instructor in Physical Education*
M.A., University of Connecticut
- James E. Haber *Assistant Professor of Biology and Rosensteil Basic Medical Sciences Research Center*
Ph.D., University of California, Berkeley
- Benjamin Halpern *Richard Koret Professor of Near Eastern Studies*
Ph.D., Harvard University
- Martin Halpern *Associate Professor of Theater Arts*
Ph.D., Harvard University
- Harlyn O. Halvorson *Professor of Biology and Director, Rosensteil Basic Medical Sciences Research Center*
Ph.D., University of Illinois
- Eugenia Hanfmann *George and Frances Levin Professor of Psychology*
Ph.D., University of Jena
- David A. Hanson *Assistant Professor of Russian*
A.B., Harvard University
- ***Victor Harris *Professor of English*
Ph.D., University of Chicago
- Erica Harth *Visiting Assistant Professor of French and Comparative Literature*
Ph.D., Columbia University
- Elie Hayon *Adjunct Associate Professor of Chemistry*
Ph.D., King's College, Durham University
- *Peter Heller *Associate Professor of Physics*
Ph.D., Harvard University
- Michael J. Henchman *Associate Professor of Chemistry*
Ph.D., Yale University
- James B. Hendrickson *Professor of Chemistry*
Ph.D., Harvard University
- Maureen Heneghan *Assistant Professor of Costume Design*
- Maurice Hershenson *Associate Professor of Psychology*
Ph.D., Yale University

* On leave, 1972-73.

*** On leave, Spring Term, 1972-73.

William E. Higgins	<i>Assistant Professor of Classics</i>
Ph.D., Harvard University	
**Donald Hindley	<i>Professor of Politics</i>
Ph.D., Australian National University	
***Milton Hindus	<i>Professor of English</i>
M.S., City College of New York	
Thomas C. Hollocher, Jr.	<i>Associate Professor of Biochemistry</i>
Ph.D., University of Rochester	
*Benjamin B. Hoover	<i>Professor of English</i>
Ph.D., University of California, Berkeley	
Jen-Shiang Hong	<i>Assistant Professor of Biochemistry</i>
Ph.D., University of California, Berkeley	
David A. Horr	<i>Assistant Professor of Anthropology</i>
Ph.D., Harvard University	
Everett C. Hughes	<i>Professor Emeritus of Sociology</i>
Ph.D., University of Chicago	
Mark L. Hulliung	<i>Assistant Professor of Politics</i>
A.B., University of Illinois	
Robert C. Hunt	<i>Associate Professor of Anthropology</i>
Ph.D., Northwestern University	
Clarence Hunter	<i>Adjunct Lecturer in African and Afro-American Studies</i>
M.A., Columbia University	
Judith T. Irvine	<i>Assistant Professor of Anthropology</i>
B.A., Radcliffe College, Harvard University	
Gerald N. Izenberg	<i>Assistant Professor of History of Ideas and History</i>
A.M., Harvard University	
Ray S. Jackendoff	<i>Assistant Professor of English</i>
Ph.D., Massachusetts Institute of Technology	
**David Jacobson	<i>Assistant Professor of Anthropology</i>
Ph.D., University of Rochester	
Clinton M. Jean	<i>Lecturer in Sociology</i>
M.A., Columbia University	
William P. Jencks	<i>Rosenstiel Professor of Biochemistry</i>
M.D., Harvard Medical School	
*Leon A. Jick	<i>Associate Professor of American Jewish Studies</i>
M.H.L., Hebrew Union College	
(On the Helen and Irving Schneider Foundation)	
William A. Johnson	<i>Albert V. Danielsen Professor of Christian Thought</i>
Ph.D., Columbia University	
Peter C. Jordan	<i>Associate Professor of Chemistry</i>
Ph.D., Yale University	
***Lisel K. Judge	<i>Associate Professor of Physical Education</i>
M.Ed., Northeastern University	
Jonathan P. Kabat	<i>Adjunct Assistant Professor of Biology</i>
Ph.D., Massachusetts Institute of Technology	

* On leave, 1972-73.

** On leave, Fall Term, 1972-73.

*** On leave, Spring Term, 1972-73.

- Julian N. Kanfer *Adjunct Associate Professor of Biochemistry*
 Ph.D., George Washington University
- Rosabeth Moss Kanter *Assistant Professor of Sociology*
 Ph.D., University of Michigan
- David Kaplan *Professor of Anthropology*
 Ph.D., University of Michigan
- Theodore L. Kazanoff *Visiting Professor of Theater Arts*
 M.A., Smith College
- Paul Kecskemeti *Visiting Professor of Sociology*
 Ph.D., University of Budapest
- Philip M. Keehn *Assistant Professor of Chemistry*
 Ph.D., Yale University
- Morton Keller *Joseph M. Proskauer Professor of Legal Institutions*
 Ph.D., Harvard University
- ***George A. Kelly *Professor of Politics*
 Ph.D., Harvard University
- Albert Kelner *Abraham S. and Gertrude Burg Professor of Microbiology*
 Ph.D., University of Pennsylvania
- Lawrence E. Kirsch *Associate Professor of Physics*
 Ph.D., Rutgers University
- *James B. Klee *Associate Professor of Psychology*
 Ph.D., University of Michigan
- Attila O. Klein *Associate Professor of Biology*
 Ph.D., Indiana University
- Karen Wilk Klein *Assistant Professor of English*
 Ph.D., Columbia University
- Raymond Knight *Assistant Professor of Psychology*
 Ph.D., University of Minnesota
- Robert Lincoln Koff *Professor of Music and Artist-in-Residence*
 B.Mus., Oberlin College
- Kenneth Kustin *Associate Professor of Chemistry*
 Ph.D., University of Minnesota
- Ernest R. Lacheman *Visiting Professor of Cuneiform Studies*
 Ph.D., Harvard University
- James R. Lackner *Assistant Professor of Psychology*
 B.Sc., Massachusetts Institute of Technology
- Angeliki E. Laiou *Associate Professor of History*
 Ph.D., Harvard University
- Timothy L. Lance *Lecturer and Research Associate in Mathematics*
 M.A. Boston College
- *Robert V. Lange *Associate Professor of Physics*
 Ph.D., Harvard University
- Richard H. Lansing *Assistant Professor of Italian and Comparative Literature*
 Ph.D., University of California, Berkeley
- *Robert J. Larner *Assistant Professor of Economics*
 Ph.D., University of Wisconsin

• On leave, 1972-73.

*** On leave, Spring Term, 1972-73.

- Hubert P. LeBlanc, Jr. *Assistant Professor of Physical Education*
A.B., Brandeis University
- *Louis Lefebvre *Fred C. Hecht Professor of International Economics*
Ph.D., Massachusetts Institute of Technology
- Alan Lelchuk *Assistant Professor of English*
Ph.D., Stanford University
- ***Max Lerner *Max Richter Professor of American Civilization and Institutions*
Ph.D., Robert Brookings Graduate School
- Martin A. Levin *Assistant Professor of Politics*
Ph.D., Harvard University
- Harold I. Levine *Professor of Mathematics*
Ph.D., University of Chicago
- *Jerome P. Levine *Professor of Mathematics*
Ph.D., Princeton University
- Lawrence Levine *Professor of Biochemistry*
Sc.D., Johns Hopkins University
(*American Cancer Society Professorship*)
- Norman E. Levine *Assistant Professor of Physical Education*
B.S., Bates College
- *Alan L. Levitan *Associate Professor of English*
Ph.D., Princeton University
- Denah L. Lida *Professor of Spanish*
Ph.D., University of Mexico
- ***David I. Lieberman *Associate Professor of Mathematics*
Ph.D., Massachusetts Institute of Technology
- Henry Linschitz *Helena Rubenstein Professor of Chemistry*
Ph.D., Duke University
- Edgar Lipworth *Professor of Physics*
Ph.D., Columbia University
- Elaine P. Loeffler *Assistant Professor of Fine Arts*
B.A., Smith College
- John M. Lowenstein *Professor of Biochemistry*
Ph.D., London University
- Susan Lowey *Associate Professor of Biochemistry and Rosenstil Basic
Medical Sciences Research Center*
Ph.D., Yale University
- Roy C. Macridis *Lawrence A. Wien Professor of International Cooperation*
Ph.D., Harvard University
- Robert J. Maeda *Assistant Professor of Fine Arts*
Ph.D., Harvard University
- Joan M. Maling *Instructor in Linguistics*
A.B., Goucher College
- Farahe Maloof *Adjunct Associate Professor of Biochemistry*
M.D., Tufts College Medical School
- Robert A. Manners *Professor of Anthropology*
Ph.D., Columbia University

* On leave, 1972-73.

*** On leave, Spring Term, 1972-73.

- John S. Marshall *Instructor in African and Afro-American Studies*
 Teruhisa Matsusaka *Professor of Mathematics*
 D.Sc., Kyoto University
- ***John F. Matthews *Professor of American Studies*
 A.B., University of Cincinnati
 (*On the Samuel and Sylvia Schulman Foundation*)
- Alan L. Mayer *Professor of Mathematics*
 Ph.D., Princeton University
- Michael B. Mazur *Assistant Professor of Fine Arts*
 M.F.A., Yale University
- Leslie Ann McArthur *Assistant Professor of Psychology*
 Ph.D., Yale University
- Barbara P. McCarthy *Visiting Professor of Classics*
 Ph.D., Yale University
- Marvin Meyers *Harry S. Truman Professor of American Civilization*
 Ph.D., Columbia University
- Allen P. Mills, Jr. *Assistant Professor of Physics*
 Ph.D., Brandeis University
- *Paul H. Monsky *Professor of Mathematics*
 Ph.D., University of Chicago
- *Charles W. Moore *Associate Professor of Theater Arts*
 M.F.A., Yale University
- Ricardo B. Morant *Minnie and Harold L. Fierman Professor of Psychology*
 Ph.D., Clark University
- Ruth Schachter Morgenthau *Harold and Harriet Toor Professor of*
 Ph.D., Oxford University, England *Black African Studies*
- E. Craig Morris *Assistant Professor of Anthropology*
 Ph.D., University of Chicago
- Leonard C. Muellner *Instructor in Classics*
 M.A., University of Michigan
- William T. Murakami *Associate Professor of Biochemistry*
 Ph.D., University of Southern California
- Pauli Murray *Louis Stulberg Professor of American Studies*
 J.S.D., Yale Law School
- Peter B. Natchez *Assistant Professor of Politics*
 Ph.D., Harvard University
- Margaret C. Nelson *Assistant Professor of Psychology*
 Ph.D., University of Pennsylvania
- Marion Nestle *Lecturer in Biology*
 Ph.D., University of California, Berkeley
- Louis Newman *Lecturer in Jewish Education, Contemporary Jewish Studies*
 M.A., Columbia University
- Gordon D. Newby *Assistant Professor of Mediterranean Studies*
 Ph.D., Brandeis University
- John D. Niles *Instructor in English*
 M.A., University of California, Berkeley

* On leave, 1972-73.

*** On leave, Spring Term, 1972-73.

- Nana Kobina Nketsia *Lecturer in African and Afro-American Studies*
Ph.D., Lincoln College, Oxford University
- Thomas P. O'Connell *Instructor in Physical Education*
C.A.G.S., Boston University
- James D. Olesen *Lecturer in Music*
B.A., University of Chicago
- Gjerding Olsen *Associate Professor of Biology*
Ph.D., Harvard University
- Richard J. Onorato *Associate Professor of English*
Ph.D., Harvard University
- Bruce I. Oppenheimer *Assistant Professor of Politics*
M.A., University of Wisconsin
- Richard S. Palais *Professor of Mathematics*
Ph.D., Harvard University
- Ronald J. Parry *Assistant Professor of Chemistry*
Ph.D., Brandeis University
- Stavros G. Papastavridis *Assistant Professor of Mathematics*
M.A., Princeton University
- Marden D. Paru *Lecturer in Contemporary Jewish Studies*
M.A., University of Chicago
- *Judith P. Pasqualucci *Assistant Professor of Physical Education*
M.A., Michigan State University
- *Michelle Patterson *Assistant Professor of Sociology*
M.Phil., Yale University
- Hugh N. Pendleton, III *Associate Professor of Physics*
Ph.D., Carnegie Institute of Technology
- Frances S. Perkins *Lecturer in Psychology*
M.Ed., Tufts University
- Donald G. Petersen *Visiting Assistant Professor in Playwriting*
B.F.A., University of New Mexico
- Mordeca J. Pollock *Assistant Professor of French*
Ph.D., Harvard University
- Robert O. Preyer *Professor of English*
Ph.D., Columbia University
- Philip Rahv *Professor of English*
- Alan T. Ramsey *Assistant Professor of Physics*
Ph.D., University of Wisconsin
- Angelina A. Raneo *Instructor in Women's Physical Education*
B.S., Northeastern University
- Esther E. Rawidowicz *Assistant Professor Emeritus of German*
Ph.D., University of Berlin
- Alfred D. Redfield *Professor of Physics and Biochemistry*
and Rosenstiel Basic Medical Sciences Research Center
Ph.D., University of Illinois
- Bernard Reisman *Assistant Professor of American Jewish Communal Studies*
Ph.D., Brandeis University

* On leave, 1972-73.

- Adrienne Rich *Fannie Hurst Visiting Professor of Creative Literature*
A.B., Radcliffe College
- Joshua Rifkin *Assistant Professor of Music*
M.F.A., Princeton University
- John A. Rinka *Lecturer in Physical Education*
B.A., Kenyon College
- Norman Rizzi *Assistant Professor of Theater Arts*
B.F.A., Massachusetts College of Art
- Dwight R. Robinson *Adjunct Assistant Professor of Biochemistry*
M.D., Columbia College of Physicians and Surgeons
- Marguerite S. Robinson *Associate Professor of Anthropology*
Ph.D., Harvard University
- Pamela A. Roby *Assistant Professor of Social Research and Sociology*
Ph.D., New York University
- *John P. Roche *Christian A. Herter Professor of International Relations*
Ph.D., Cornell University
- Nicholas Rodis *Professor of Physical Education*
Ed.M., American International College
- David Rosen *Assistant Professor of Music*
M.A., University of California, Berkeley
- Steven J. Rosen *Assistant Professor of Politics*
Ph.D., Syracuse University
- Larry Rosenberg *Assistant Professor of Sociology*
Ph.D., University of Chicago
- ***Myron Rosenblum *Professor of Chemistry*
Ph.D., Harvard University
- Gerald Rosenthal *Associate Professor of Economics*
Ph.D., Harvard University
- George W. Ross *Assistant Professor of Sociology*
M.Sc., London School of Economics
- Hugo Rossi *Professor of Mathematics*
Ph.D., Massachusetts Institute of Technology
- Joshua Rothenberg *Lecturer in Yiddish Literature*
M.A., Rutgers University
- Murray Sachs *Professor of French*
Ph.D., Columbia University
- I. Milton Sacks *Morris Hillquit Professor of Labor and Social Thought*
Ph.D., Yale University
- Benson Saler *Associate Professor of Anthropology*
Ph.D., University of Pennsylvania
- Ina Samuels *Visiting Lecturer in Psychology*
Ph.D., University of Michigan
- Peter M. Sander *Assistant Professor of Theater Arts*
M.F.A., Carnegie Institute of Technology
- Nahum M. Sarna *Dora Golding Professor of Biblical Studies*
Ph.D., Dropsie College

* On leave, 1972-73.

*** On leave, Spring Term, 1972-73.

- Mary-Lou Sayles *Instructor in Women's Physical Education*
B.S., in Ed., Northeastern University
- Jerome A. Schiff *Professor of Biology*
Ph.D., University of Pennsylvania
- Solomon Schimmel *Assistant Professor of Psychology*
Ph.D., Wayne State University
- Robert F. Schleif *Assistant Professor of Biochemistry*
Ph.D., University of California, Berkeley
- Peter E. Schmidt *Assistant Professor of Physics*
Ph.D., Columbia University
- David J. Schneider *Associate Professor of Psychology*
Ph.D., Stanford University
- Howard J. Schnitzer *Professor of Physics*
Ph.D., University of Rochester
- John Schrecker *Associate Professor of History*
Ph.D., Harvard University
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National Endowment for the Humanities Senior Fellowship
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